NOISE IMPACT ANALYSIS

Sprint Communications
Site Number: CA-8949-A
Site Name: Bandy Canyon
15738 Highland Valley Road
Escondido, California 92025

County of San Diego Major Use Permit
Case Number: P05-050; Log No. 05-08-029

Prepared For

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Job # A60210N1

March 2, 2006

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1.0 EXECUTIVE SUMMARY

The proposed Sprint/Nextel wireless telecommunications facility, known as Bandy Canyon, consists of the construction of an unmanned telecommunications facility consisting of a 10.5-foot high by 11.5-foot wide by 20-foot long prefabricated equipment shelter which will enclose equipment cabinets for wireless telecommunications equipment. Also planned are 15 panel antennas which will be mounted on a proposed 35-foot high mono-broadleaf and two GPS antennas which will be mounted on the equipment shelter. New electric and telco runs to the area of the equipment shelter are also planned. The project site is located at 15738 Highland Valley Road, in Escondido, County of San Diego, California.

The purpose of this report is to assess noise impacts from on-site noise sources, and to determine if mitigation is necessary and feasible to reduce project related property line noise impacts to below 45 dBA, in compliance with the County of San Diego most restrictive nighttime property line noise limit.

Based on the project information available, calculations show that HVAC equipment noise impacts from the proposed Sprint/Nextel facility will be as high as 48.3 dBA L_{EQ} at the eastern property line, at the worst case location.

Mitigation is required to reduce the property line noise impacts to meet the most restrictive 45 dBA nighttime noise limit at the eastern property line. The noise levels at the remaining property lines are expected to comply with the County of San Diego nighttime property line noise limits without any mitigation measures, due to distance and topography.

The required noise levels can be achieved by shielding the air conditioning units with a sound attenuation barrier. The project plans depict a proposed 8-foot high wooden fence surrounding the proposed equipment shelter. Even if the proposed fence were constructed to meet the requirements of a sound attenuation barrier, the noise level at the eastern property line will exceed the allowable noise limits. The barrier must be constructed to a minimum height of 10.5-feet relative to the equipment shelter pad grade elevation in order to reduce the noise impacts to below 45 dBA. No other noise attenuation mitigation for the proposed project is required.

With the recommended mitigation, the unmanned operation of this facility will be in compliance with the most restrictive County of San Diego 45 dBA nighttime property line noise limits.

2.0 INTRODUCTION

This acoustical analysis report is submitted to satisfy the County of San Diego requirement for a major use permit. Its purpose is to assess noise impacts from on-site project related noise sources, and to determine if mitigation is necessary and feasible to reduce property line noise impacts to below 45 dBA, in compliance with the County of San Diego nighttime property line noise limit.

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting, abbreviated "dBA," to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol "L_{EQ}" unless a different time period is specified, "L_{EQ}" is implied to mean a period of one hour. Some of the data may also be presented as octave-band-filtered and/or A-octave-band-filtered data, which are a series of sound spectra centered about each stated frequency, with half of the bandwidth above and half of the bandwidth below each stated frequency. This data is typically used for machinery noise analysis and barrier-effectiveness calculations.

The Community Noise Equivalent Level (CNEL) is a 24-hour average, where sound levels during evening hours of 7 p.m. to 10 p.m. have an added 5 dB weighting, and sound levels during nighttime hours of 10 p.m. to 7 a.m. have an added 10 dB weighting. This is similar to the Day-Night Sound Level (L_{DN}), which is a 24-hour average with 10 dB added weighting on the same nighttime hours but no added weighting on the evening hours. Sound levels expressed in CNEL are always based on A-weighted decibels. These data unit metrics are used to express noise levels for both measurement and municipal noise ordinances and regulations, for land use guidelines, and enforcement of noise ordinances. Further explanation can be provided upon request.

Noise emission data is often supplied per the industry standard format of Sound Power, which is the total acoustic power radiated from a given sound source as related to a reference power level. Sound Power differs from Sound Pressure, which is the fluctuations in air pressure caused by the presence of sound waves, and is generally the format that describes noise levels as heard by the receiver.

Sound Pressure is the actual noise experienced by a human or registered by a sound level instrument. When Sound Pressure is used to describe a noise source it must specify the distance from the noise source to provide complete information. Sound Power, on the other hand, is a specialized analytical method to provide information without the distance requirement, but it may be used to calculate the sound pressure at any desired distance.

2.1 Project Location

The subject property is located at 15738 Highland Valley Road, in Escondido, California. The Assessor's Parcel Number (APN) is 276-150-02-00. The property is rectangular in shape with an overall site area of approximately 9.7 acres. The zoning designation for the subject parcel is A-70 for agricultural use. Planned land uses in the vicinity of the project site are residential and agricultural to the north, agricultural to the east and west, and residential to the south.

The subject property is currently occupied by a single private residence. There is one existing wireless facility on the subject site operated by T-Mobile. The proposed Sprint/Nextel lease area site is in the southeast corner of the subject property, immediately adjacent to the north side of T-Mobile facility, and approximately 350 feet south of the existing home. The lease area is currently an undeveloped open space.

For a graphic representation of the site, please refer to the Thomas Guide Map, Assessor's Parcel Map, Satellite Aerial Photograph, Topographic Map, and Land Use Map provided as Figures 1 through 5, respectively.

2.2 Project Description

The proposed project consists of the construction of an unmanned telecommunications facility consisting of a 10.5-foot high by 11.5-foot wide by 20-foot long prefabricated equipment shelter which will enclose equipment cabinets for wireless telecommunications equipment. Also planned are 15 panel antennas which will be mounted on a proposed 35-foot high mono-broadleaf and two GPS antennas which will be mounted on the equipment shelter. New electric and telco runs to the area of the equipment shelter are also planned.

For additional project details, please refer to the project plans provided in Appendix A.

2.3 Applicable Noise Standards

The noise regulations applicable to this project are contained within the San Diego County Code, Section 8.32.040, entitled Sound Level Limits. Based on these noise regulations, and the County of San Diego scoping letter, dated January 25, 2006, the following property line noise limits apply for this project: 50 dBA from 7 a.m. to 10 p.m. and 45 dBA from 10 p.m. to 7 a.m. Planning for this project will be based on the more restrictive nighttime limit of 45 dBA.

Please refer to copies of the pertinent related sections from the County of San Diego scoping letter which is provided as Appendix B and pertinent sections of the San Diego County Code provided as Appendix C.

3.0 ENVIRONMENTAL SETTING

3.1 Existing Noise Environment

3.1.1 Existing Noise Sources

The existing noise environment is primarily a result of traffic noise from Highland Valley Road and the existing on-site T-Mobile wireless equipment facility.

Existing T-Mobile Wireless Facility

The existing T-Mobile wireless equipment facility consists of one type of significant noise source which is an Ericsson RBS 2102 un-enclosed equipment cabinet. One 2102 cabinet is currently installed at the T-Mobile facility. The existing T-Mobile facility also consists of a faux water tower with an antenna array, and a 6-foot high wooden fence surrounding the entire facility.

Manufacturer's noise emission data for an Ericsson RBS 2102 cabinet were unavailable. To determine the expected equipment exterior noise levels for this analysis, it was necessary to measure the noise level of a single operational unit. A noise level measurement of a single existing RBS 2102 equipment cabinet was made at an operational Cingular wireless installation at 32165 Shamrock Road in Bonsall (Fallbrook Community Planning Area), California, at 2:30 p.m. on November 2, 2003. The measured

noise level was 52.8 dBA L_{EQ} at 5 feet. The octave-band noise data for the equipment cabinet noise measurement used in the new Cingular planning analysis is provided in Table 1.

Table 1. Measured Noise Level of a Single Operational Ericsson RBS 2102 Cabinet									
Octave Band Center Frequency (Hz)	63	125	250	500	1K	2K	4K	8K	L_{EQ}
Noise Level at 5 feet (dB)	56.4	56.7	60.1	47.1	37.3	34.1	32.7	33.4	52.8 dBA

3.1.2 Ambient Noise Monitoring

An on-site inspection was conducted at 3:07 p.m. on Monday, February 13, 2006. The weather conditions were as follows: a breeze from the west, low humidity, and temperatures in the low 70's. A 5-minute ambient noise measurement of 55.5 dBA L_{EQ} was taken at a location adjacent to the proposed lease area. The microphone position was approximately five feet above the existing grade.

3.2 Future Noise Environment

The future noise environment in the vicinity of the project site will be primarily a result of the same noise sources, as well as the proposed Sprint/Nextel wireless facility.

3.2.1 Project Related Noise Sources

The proposed Sprint/Nextel wireless equipment facility consists of one type of significant noise source, which are exterior-mounted air conditioning units.

This project proposes the use of two Marvair ComPac II HVAC units. While two HVAC units are planned to be installed on the exterior of the equipment shelter, only one is expected to be operational at a time, never running simultaneously. The proposed Sprint/Nextel facility is planned to be operational 24 hours a day, 7 days a week.

To determine the expected equipment exterior noise levels for this analysis, it was necessary to measure the noise level of a single operational unit. The manufacturer's data show the noise emission level for this unit as 73 dBA at 5 feet. A noise level measurement of a single existing Marvair ComPac II HVAC unit was made at an operational Verizon installation at Casa de las Campanas, 18655 West Bernardo Drive, in the City of San Diego, California, at 7:30 a.m. on November 24, 2003. The measured noise level was 74.9 dBA L_{EQ} at 5 feet. The measurement may have a small traffic noise contribution, as it is slightly higher than the manufacturer's data; therefore, the measured noise level will be used for worst-case analysis and noise planning purposes. The octave-band noise data for the HVAC unit noise measurement used in the new Sprint/Nextel planning analysis is provided in Table 2.

Table 2. Measured Noise Level of a Single Operational Marvair ComPac II HVAC Unit									
Octave Band Center Frequency (Hz)	63	125	250	500	1K	2K	4K	8K	L_{EQ}
Noise Level at 5 feet (dB)	79.9	77.5	75.5	70.5	70.6	66.8	59.6	55.2	74.9 dBA

The Sprint/Nextel wireless facility also incorporates fully enclosed equipment cabinets housed within a pre-fabricated shelter. Noise impacts from these equipment cabinets are not considered significant, and therefore are not included in the noise impact analysis.

4.0 METHODOLOGY AND EQUIPMENT

4.1 Methodology

4.1.1 Cadna Noise Modeling Software

Modeling of the outdoor noise environment is accomplished using Cadna Ver. 3.5, which is a model-based computer program developed by DataKustik for predicting noise impacts in a wide variety of conditions. Cadna (Computer Aided Noise Abatement) assists in the calculation, presentation, assessment, and mitigation of noise exposure. It allows for the input of project information such as noise source data, barriers, structures, and topography to create a detailed CAD model and uses the most up-to-date calculation standards to predict outdoor noise impacts.

4.1.2 Summary of Site Specific Features Included in Cadna Model

Features at the project site that were included in the Cadna noise prediction model are listed in Table 3. These are considered to be the only on-site features that will affect the noise propagation of the proposed noise sources to the adjacent property lines.

Table 3. Summary of Site Features Included in Cadna Model

Description	Height
Existing Home	15 feet above grade
Existing T-Mobile Equipment	13 feet above grade
Existing Fence Surrounding T-Mobile Facility	6 feet above grade
Proposed Sprint/Nextel HVAC Equipment	4 feet above grade
Proposed Sprint/Nextel Equipment Shelter	10.5 feet above grade

4.1.3 Calculated Noise Levels for Model Comparison

In order to validate the results of the Cadna noise prediction model, the noise impacts from the proposed Sprint/Nextel HVAC equipment were manually calculated as simple attenuation by distance. This was done for each of the property line receiver locations. These values were compared to those predicted by Cadna. The Cadna model includes additional attenuation due to intervening structures, topography, and ground absorption, which the differences in modeled and calculated noise levels are attributed to. This data is summarized in Table 4.

Table 4. Calculated Noise Levels for Model Comparison						
Noise Source	Receiver	Location	Distance from Source (ft.)	Calculated Noise Level[1] (dBA)	Cadna Model Noise Level[2] (dBA)	Difference (dB)
Marvair ComPac II 74.9 dBA Measured @ 5 ft.	R1	Northern Property Line	587	33.5	16.1	17.4
	R2	Southern Property Line	97	49.1	31.6	17.5
	R3	Eastern Property Line	35	57.9	48.3	9.6
	R4	Western Property Line	595	33.4	20.4	13.0

[1] Calculated as attenuation by distance only, $L_2 = L_1 - 20\log\left(\frac{d_2}{d_1}\right)$
[2] As predicted by Cadna model

4.2 Measurement Equipment

Some or all of the following equipment was used at the site to measure existing noise levels:

- Larson Davis Model 824, Type 1 Sound Level Meter, Serial #824A0343
- Larson Davis Model CA250, Type 1 Calibrator, Serial #2625

The sound level meter was field-calibrated immediately prior to the noise measurement and checked afterwards, to ensure accuracy. All sound level measurements conducted and presented in this report, in accordance with the regulations, were made with sound level meters that conform to the American National Standards Institute specifications for sound level meters (ANSI SI.4-1983, R2001). All instruments are maintained with National Bureau of Standards traceable calibration, per the manufacturers' standards.

5.0 IMPACTS

The proposed Sprint/Nextel facility HVAC equipment noise levels are expected to exceed the County of San Diego nighttime property line noise limits at the eastern property line. Based on the project information available, calculations show that HVAC equipment noise impacts from the proposed Sprint/Nextel facility will be as high as 48.3 dBA L_{EQ} at the eastern property line, at the worst case location. The calculated noise levels at each property line at the worst case location are summarized in Table 5.

For details of the acoustical analysis, please refer to Appendix D: Cadna Analysis Data and Results. Please also refer to Figure 6: Site Plan Showing Unmitigated Noise Impacts to Project Vicinity and Property Line Receiver Locations.

Table 5. Calculated Combined Wireless Facility Noise Impact Levels				
Receiver Location	T-Mobile (dBA L_{EQ})	Sprint/Nextel (dBA L_{EQ})	Combined[1] (dBA L_{EQ})	Increase due to Sprint/Nextel (dB)
R1, Northern Property Line	0.0	16.0	16.1	16.0
R2, Southern Property Line	24.4	30.7	31.6	7.2
R3, Eastern Property Line	22.1	48.3	48.3	26.2
R4, Western Property Line	0.0	20.3	20.4	20.3

[1] All equipment combined noise level

The HVAC equipment for the proposed Sprint/Nextel facility will not create any significant noise impacts to the existing residence on the subject parcel. The noise levels at the building façade of the existing home are not expected to exceed 21.0 dBA L_{EQ}. The property lines that lie south of the existing home will not be impacted by any significant noise generated by the proposed wireless facility.

6.0 MITIGATION

Mitigation is required to reduce the property line noise impacts to meet the most restrictive 45 dBA nighttime noise limit at the western and northern property lines.

The required noise levels can be achieved by shielding the air conditioning units with a sound attenuation barrier. The project plans depict a proposed 8-foot high wooden fence surrounding the proposed equipment shelter. Even if the proposed fence were constructed to meet the requirements of a sound attenuation barrier, the noise level at the eastern property line will exceed the allowable noise limits. The barrier must be constructed to a minimum height of 10.5-feet relative to the equipment shelter pad grade elevation in order to reduce the noise impacts to below 45 dBA. No other noise attenuation mitigation for the proposed project is required.

The sound attenuation barrier should be a single, solid sound wall. The sound attenuation barrier height should be based on the finished pad grade elevation of the proposed prefabricated shelter. The sound attenuation barrier should be solid and constructed of masonry, wood, plastic, fiberglass, steel, or a combination of those materials, with no cracks or gaps through or below the wall. Any seams or cracks must be filled or caulked. If wood is used, it can be tongue and groove and must be at least one-inch thick or have a surface density of at least 3½ pounds per square foot. Where architectural or aesthetic factors allow, glass or clear plastic may be used on the upper portion, if it is desirable to preserve a view. Sheet metal of 18-gauge (minimum) may be used, if it meets the other criteria and is properly supported and stiffened so that it does not rattle or create noise itself from vibration or wind. Any doors or gates must be designed with overlapping closures on the bottom and sides and meet the minimum specifications of the wall materials described above. The gate(s) may be of ¾-inch or thicker wood, solid-sheet metal of at least 18-gauge metal, or an exterior-grade solid-core steel door with prefabricated door jambs.

The calculated noise levels, with the sound attenuation barrier mitigation in place, are shown in Table 6. For details of the acoustical analysis, please refer to Appendix D: Cadna Analysis Data and Results.

Table 6. Calculated Combined Mitigated Wireless Facility Noise Impact Levels

Receiver Location	T-Mobile (dBA L_{EQ})	Sprint/Nextel (dBA L_{EQ})	Combined[1] (dBA L_{EQ})	Increase due to Sprint/Nextel (dB)
R1, Northern Property Line	0.0	13.7	13.8	13.8
R2, Southern Property Line	24.4	29.8	30.9	6.5
R3, Eastern Property Line	19.5	44.6	44.6	25.1
R4, Western Property Line	0.0	18.2	18.2	18.2

[1] All equipment combined noise level

With the recommended mitigation, the unmanned operation of this facility will be in compliance with the County of San Diego nighttime property line noise limits.

Please refer to Figure 7: Site Plan Showing Mitigated Noise Impacts to Project Vicinity and Property Line Receiver Locations.

7.0 CONCLUSION

With the installation of the recommended sound attenuation barrier, the proposed Sprint/Nextel wireless facility will be in compliance with all applicable County of San Diego property line noise limits.

These conclusions and recommendations are based on the most up-to-date, project-related information available. However, noise characteristics of mechanical equipment may vary for specific installations. Verification of compliance with County of San Diego noise regulations can be provided, if desired, by conducting a noise survey consisting of sound level measurements at or close to the nearest impacted locations in each direction, after the project is built and in operation.

This is best accomplished in the late night or very early morning hours while the equipment is in full operation and other ambient noise sources are minimized. If any additional sound attenuation is found to be necessary, it can be specified at that time. We do not expect that any additional sound attenuation will be necessary within the scope of this project.

8.0 CERTIFICATION

This report is based on the related project information received and measured noise levels, and represents a true and factual analysis of the acoustical impact issues associated with the proposed Sprint/Nextel wireless telecommunications facility, located 15738 Highland Valley Road, in Escondido, County of San Diego, California. This report was prepared by Justin Smith, Michael Burrill, Charles Terry, and Douglas Eilar.

EILAR ASSOCIATES

Justin D. Smith, Senior Acoustical Consultant

Douglas K. Eilar, Principal

9.0 REFERENCES

1. Beranek, Leo L., *Acoustical Measurements*, Published for the Acoustical Society of America by the American Institute of Physics, Revised Edition, 1988.

2. San Diego County Code

3. Harris, Cyril M., *Handbook of Acoustical Measurements and Noise Control*, Acoustical Society of America, 3rd Edition, 1998.

4. Harris, Cyril M., Ph.D., *Noise Control in Buildings*, Original Edition, 1994.

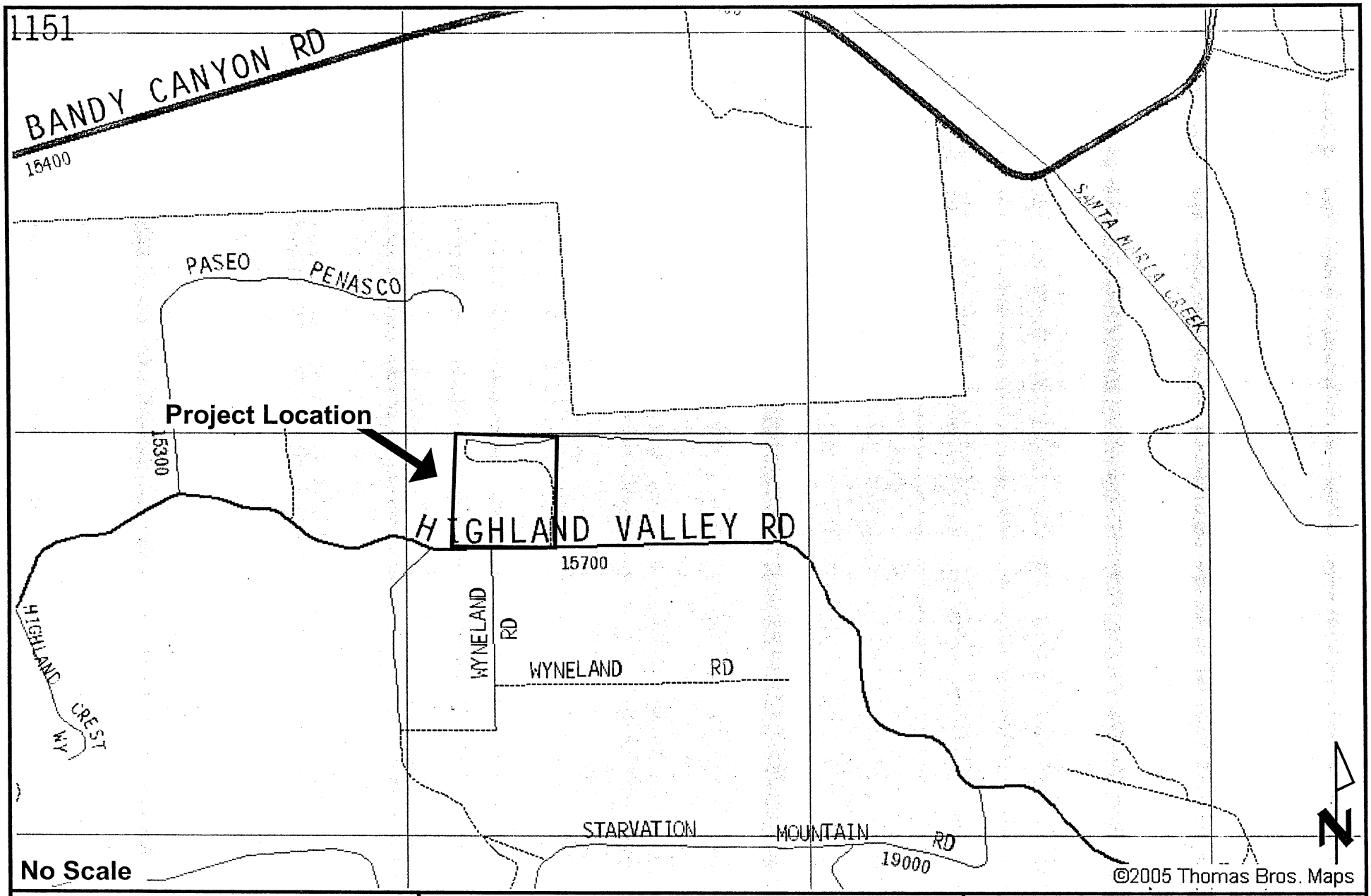
5. Hirschorn, Martin, *Noise Control Reference Handbook*, Revised Edition, 1989.

6 Ivine, Leland K. and Richards, Roy L., *Acoustics and Noise Control Handbook for Architects and Builders*, Original Edition, 1998.

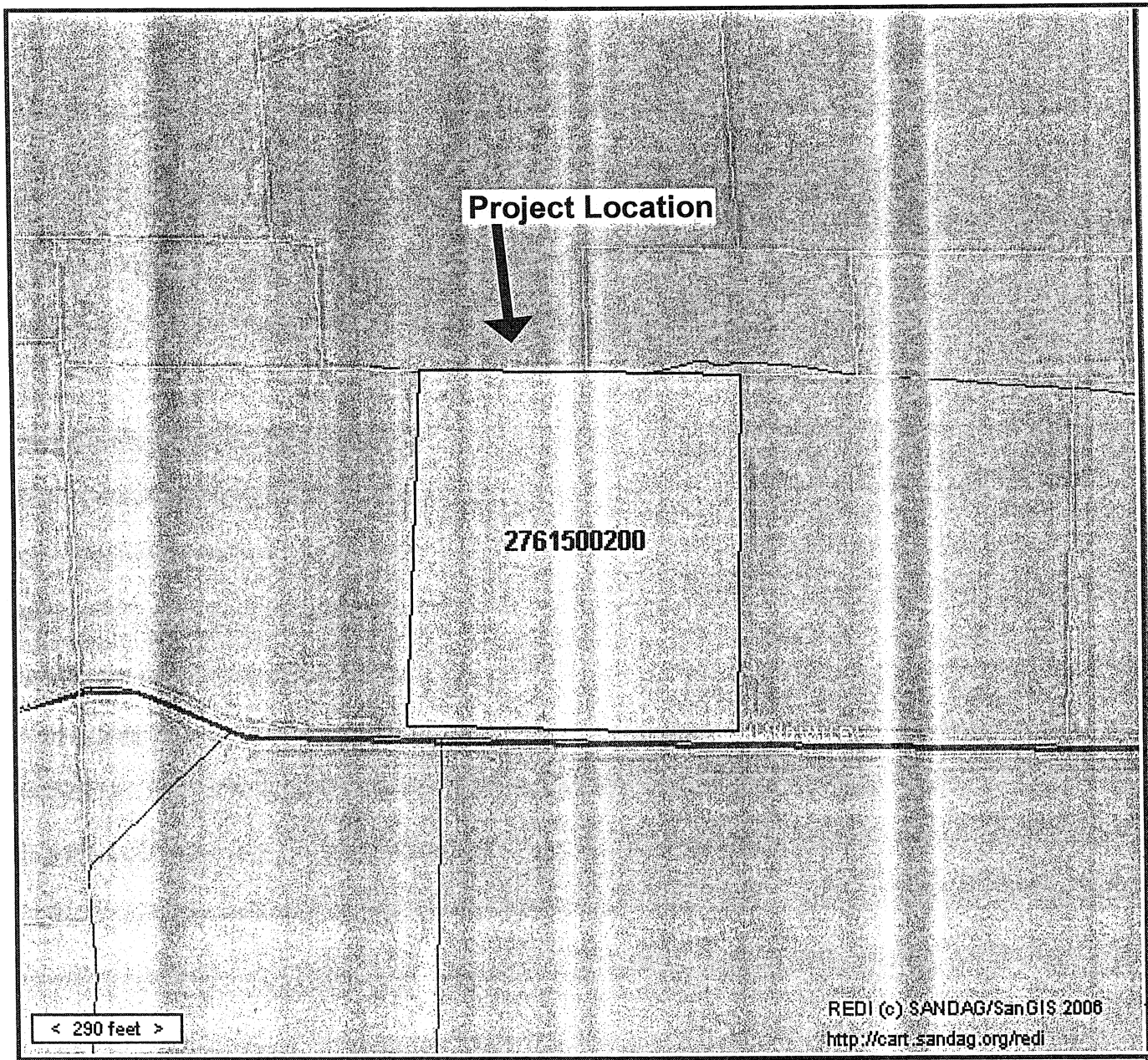
7 Knudsen, Vern O. and Harris, Cyril M., *Acoustical Designing In Architecture*, American Institute of Physics for the Acoustical Society of America, 2nd Edition, 1978.

8. Raichel, Daniel R., *The Science and Applications of Acoustics*, American Institute of Physics Press for the Acoustical Society of America, 1st Edition, 2000.

FIGURES



Eilar Associates **539 Encinitas Boulevard, Suite 206** **Encinitas, California 92024** **760-753-1865**	**Thomas Guide Map** **Job # A60210N1**	**Figure 1**



LEGEND

Reference Layers

Parcels

Roads

APN:276-150-02-00

N

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Encinitas, California 92024
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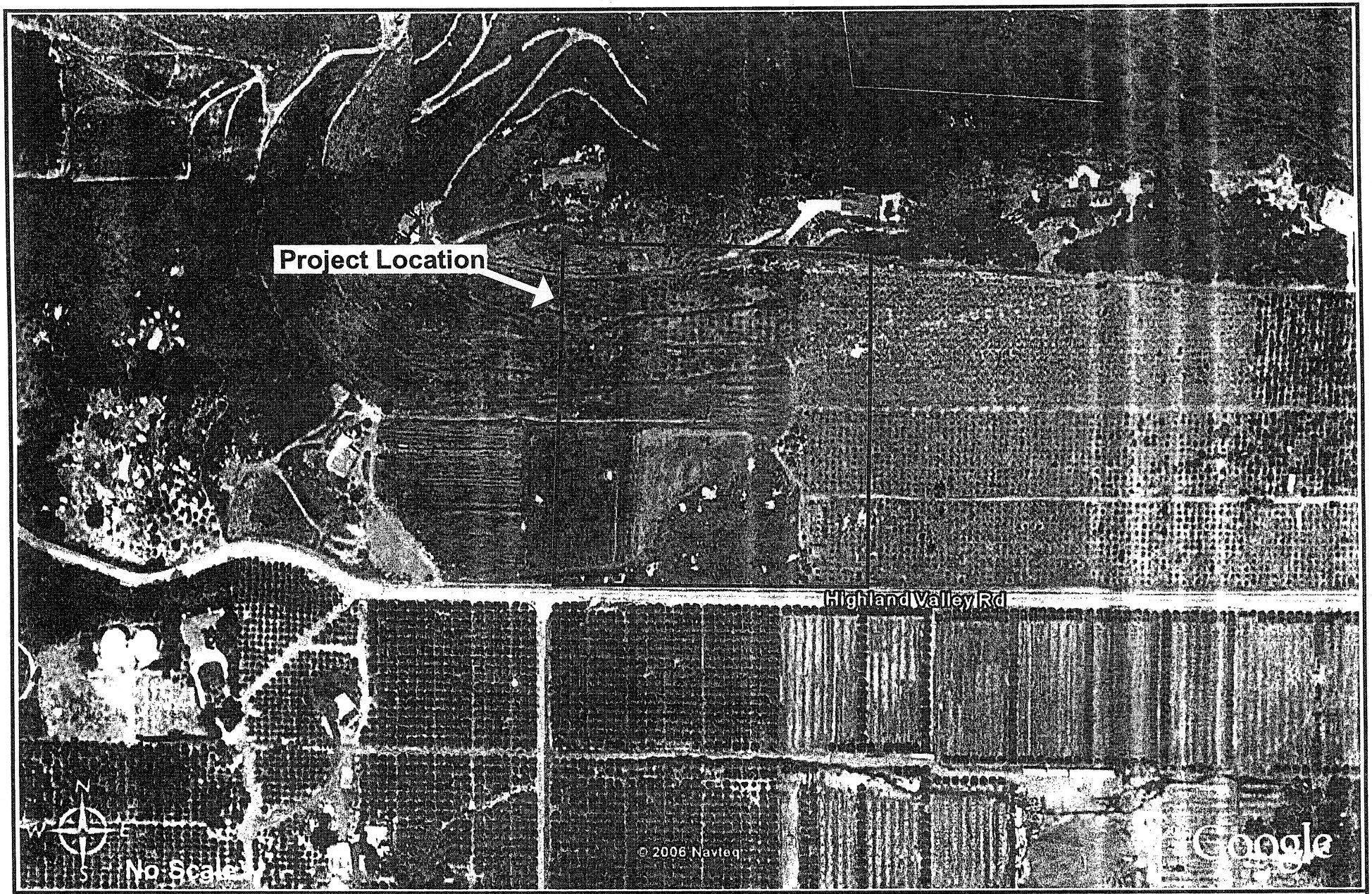
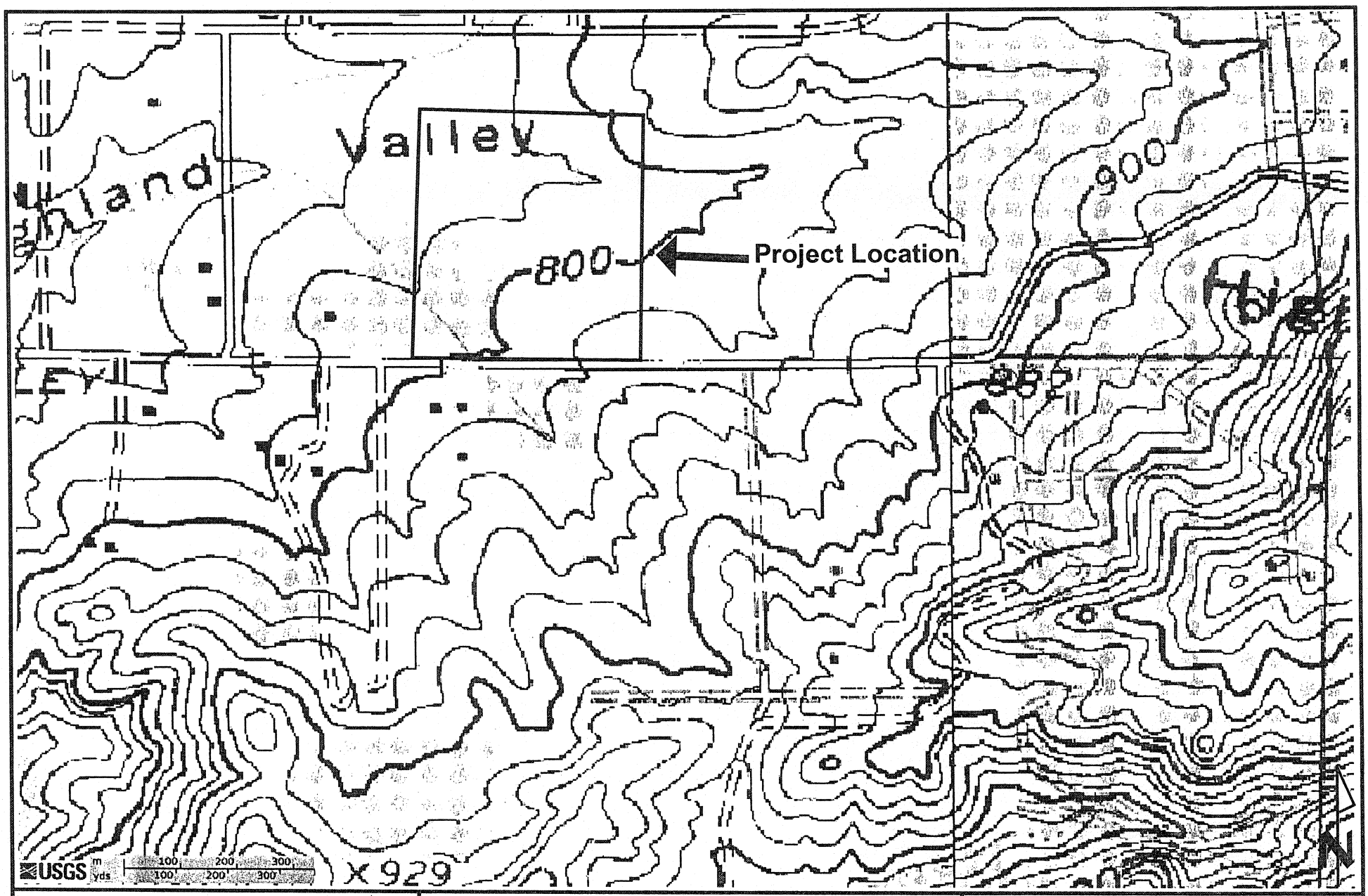
Assessor's Parcel Map
Job # A60210N1

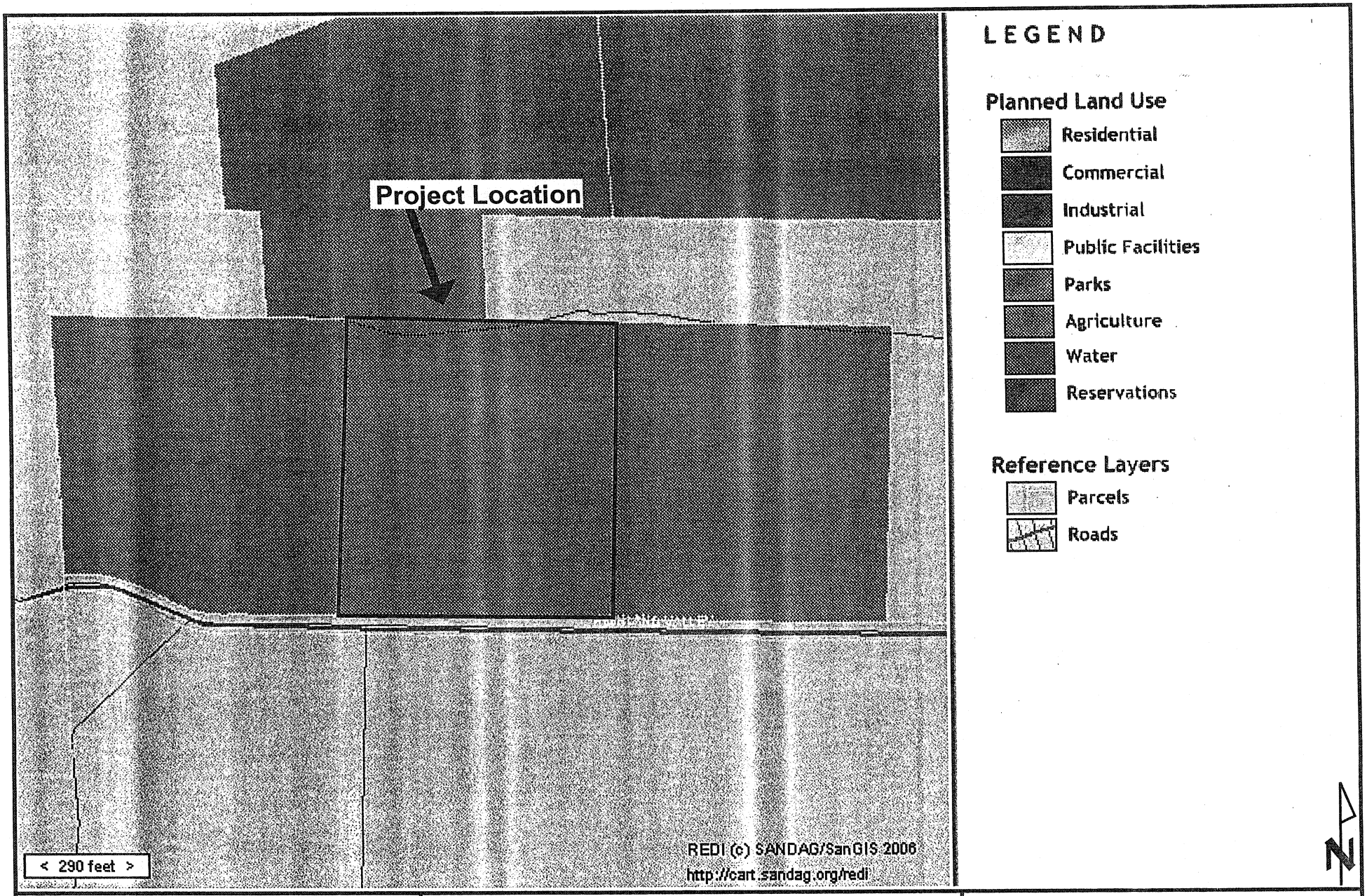
Figure 2



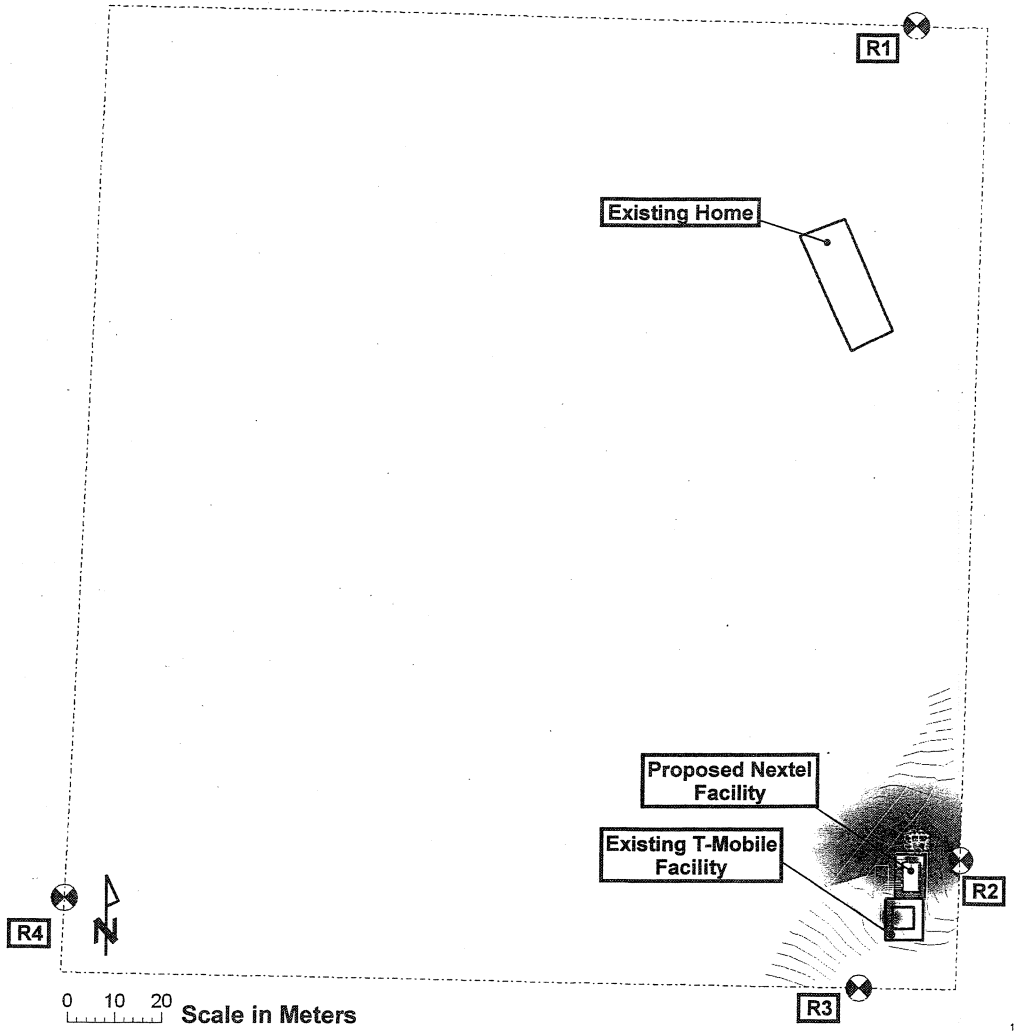
Eilar Associates 539 Encinitas Boulevard, Suite 206 Encinitas, California 92024 760-753-1865	Satellite Aerial Photograph Job # A60210N1	Figure 3

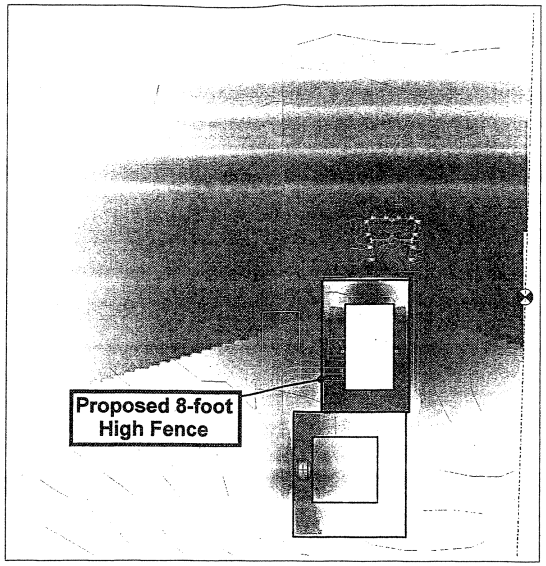


Eilar Associates 539 Encinitas Boulevard, Suite 206 Encinitas, California 92024 760-753-1865	Topographic Map Job # A60210N1	Figure 4



Eilar Associates **539 Encinitas Boulevard, Suite 206** **Encinitas, California 92024** **760-753-1865**	**Planned Land Use** **Job # A60210N1**	**Figure 5**





Enlarged View of Lease Area

Calculated Combined Wireless Facility Noise Impact Levels

Receiver Location	T-Mobile (dBA L_{EQ})	Nextel (dBA L_{EQ})	Combined[1] (dBA L_{EQ})	Increase due to Nextel (dB)
R1. Northern Property Line	0.0	16.0	16.1	16.0
R2. Southern Property Line	24.4	30.7	31.6	7.2
R3. Eastern Property Line	22.1	48.3	48.3	26.2
R4. Western Property Line	0.0	20.3	20.4	20.3

[1] All equipment combined noise level

- > 45.0 dBA
- > 50.0 dBA
- > 55.0 dBA
- > 60.0 dBA
- > 65.0 dBA
- > 70.0 dBA
- > 75.0 dBA
- > 80.0 dBA
- > 85.0 dBA

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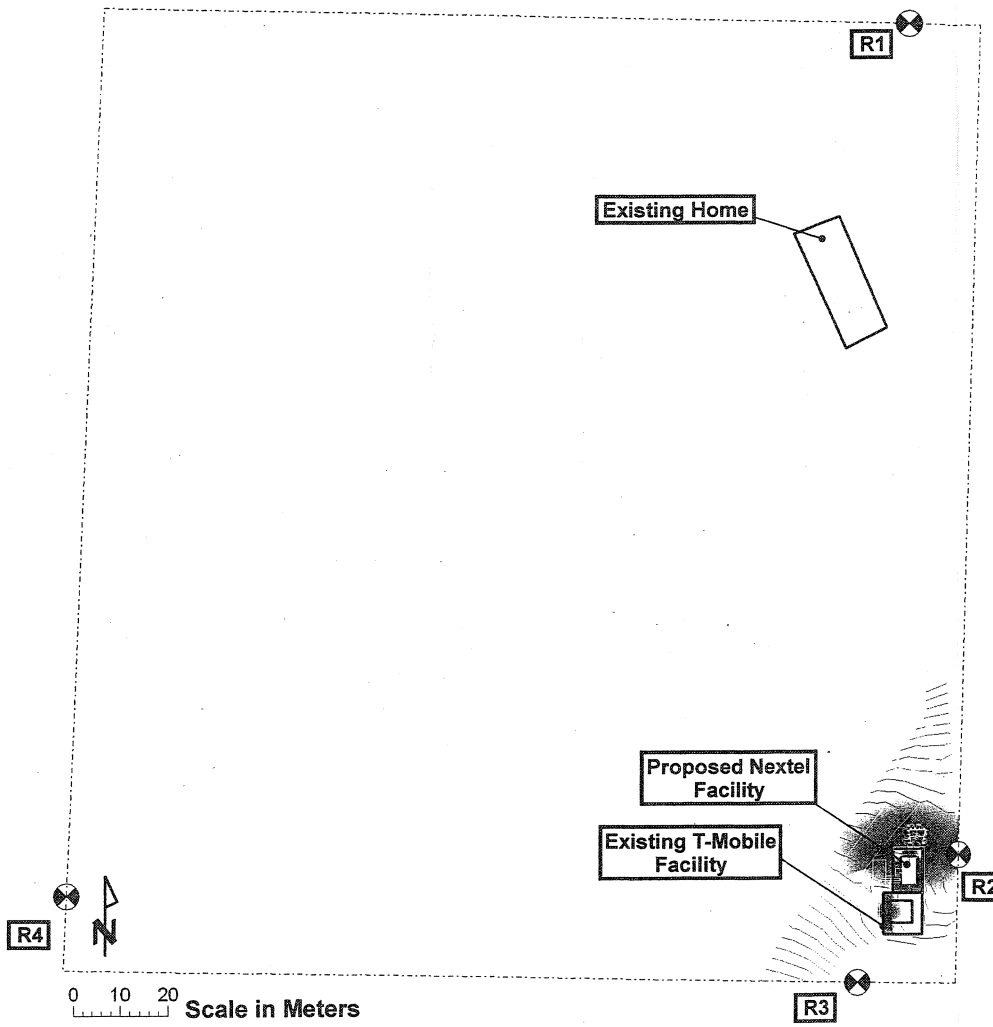
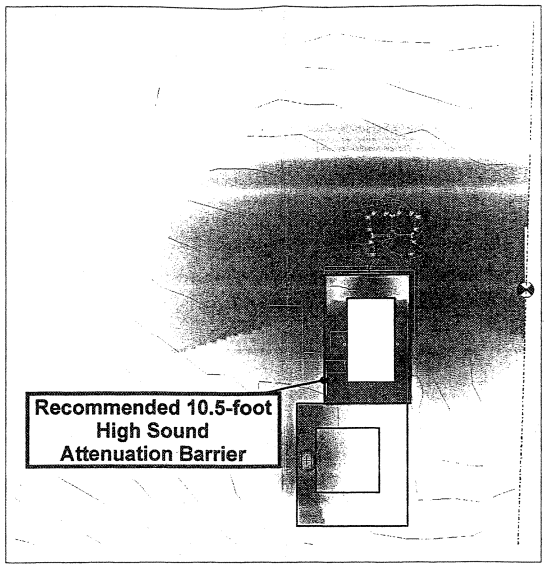
760-753-1865

Site Plan Showing Unmitigated Noise Impacts to Project Vicinity and Property Line Receiver Locations
Job # A60210N1

Figure 6





Enlarged View of Lease Area

Calculated Combined Mitigated Wireless Facility Noise Impact Levels

Receiver Location	T-Mobile (dBA L_{EQ})	Nextel (dBA L_{EQ})	Combined[1] (dBA L_{EQ})	Increase due to Nextel (dB)
R1, Northern Property Line	0.0	13.7	13.8	13.8
R2, Southern Property Line	24.4	29.8	30.9	6.5
R3, Eastern Property Line	19.5	44.6	44.6	25.1
R4, Western Property Line	0.0	18.2	18.2	18.2

[1] All equipment combined noise level

- > 45.0 dBA
- > 50.0 dBA
- > 55.0 dBA
- > 60.0 dBA
- > 65.0 dBA
- > 70.0 dBA
- > 75.0 dBA
- > 80.0 dBA
- > 85.0 dBA

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Site Plan Showing Mitigated Noise Impacts to
Project Vicinity and Property Line Receiver Locations
Job # A60210N1

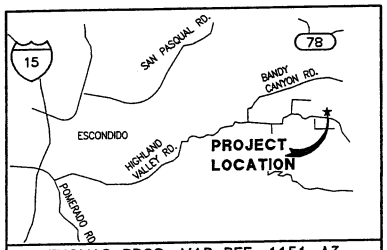
Figure 7

P 05-050, Log No. 05-08-029

Sprint

Together with NEXTEL

CA-8949-A
BANDY CANYON
15738 HIGHLAND VALLEY ROAD
ESCONDIDO, CA 92025



THOMAS BROS. MAP REF: 1151-A3
THOMAS BROS. EDITION 2004
(COUNTY: SAN DIEGO)

VICINITY MAP

FROM I-15 & HWY 52 HEAD NORTH 15.7 MILES TO POMERAND ROAD. HEAD .3 MILE TO HIGHLAND VALLEY. GO EAST 5.2 MILES TO SITE ON LEFT SIDE OF ROAD.

DRIVING DIRECTIONS

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. CALIFORNIA BUILDING CODE CBC-2001
2. CALIFORNIA ADMINISTRATIVE CODE (INCL. TITLES 24 & 25) 2001
3. ANSI/EIA-222-F LIFE SAFETY CODE
4. NFPA-101-1997
5. CALIFORNIA ELECTRICAL CODE CEC-2004
6. CALIFORNIA MECHANICAL CODE CMC-2001
7. CALIFORNIA PLUMBING CODE CPC-2001
8. LOCAL BUILDING CODE(S)
9. CITY AND/OR COUNTY ORDINANCES

CODE COMPLIANCE

THIS PROJECT CONSISTS OF THE INSTALLATION AND OPERATIONS OF ANTENNAS AND ASSOCIATED EQUIPMENT FOR THE 'SPRINT-NEXTEL' WIRELESS TELECOMMUNICATIONS NETWORK. THE FOLLOWING SHALL BE INSTALLED AT THE PROJECT SITE:

- ONE (1) 11'-6" X 20'-0" PREFABRICATED EQUIPMENT SHELTER
- FIFTEEN (15) PANEL ANTENNAS MOUNTED ON A PROPOSED MONOBROADLEAF
- TWO (2) GPS ANTENNAS: MOUNTED ON EQUIPMENT SHELTER
- POWER, TELCO & COAX CABLE RUNS

PROJECT DESCRIPTION

APPLICANT/LESSEE:

SPRINT-NEXTEL COMMUNICATIONS PHONE: (858) 650-4248
5761 COPLEY DRIVE, SUITE 100 FAX: (858) 650-4202
SAN DIEGO, CA 92111
CONTACT: ANNE WULFTANGE, LEASING COORDINATOR
PHONE: (858) 602-6522 FAX: (858) 650-4202
CONTACT: OMAR PASSONS, ZONING COORDINATOR
PHONE: (858) 650-4318 FAX: (858) 650-4202
CONTACT: RANDY WALKER, CONSTRUCTION MANAGER
PHONE: (541) 430-0490 FAX: (858) 650-4202
CONTACT: LAARNI CHRISTINE BUGAYONG, RF ENGINEER
PHONE: (760) 250-5190 FAX: (858) 650-4202

PROPERTY INFORMATION:

OWNER: GERALDO & ROSA CORDIANO
ADDRESS: 15732 HIGHLAND VALLEY ROAD
CONTACT: JERRY CORDIANO
PHONE: (760) 443-2261
A.P.N.: 276-150-02-00

PROJECT INFORMATION:

AREA OF CONSTRUCTION:	EQUIP. LEASE AREA = 40' X 30'
OCCUPANCY GROUP:	B (TELECOMMUNICATIONS FACILITY)
CONSTRUCTION TYPE:	V-N
CURRENT ZONING:	A70
ZONING APPLICATION:	MINOR USE PERMIT
ACCESSIBILITY REQUIREMENTS:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED.

PROJECT SUMMARY

ARCHITECT:

DCI PACIFIC
2450 DUPONT DRIVE
IRVINE, CA 92612
CONTACT: D.K. DO E-MAIL: DKDO@DCIPACIFIC.COM
PHONE: (949) 475-1000 FAX: (949) 475-1001

SURVEYOR:

FLOYD SURVEYING INC.
2553 WAGON WHEEL RD.
NORCO, CA 92860
CONTACT: DAVID A. FLOYD E-MAIL: FLOYD_SURVEYING@DIRECWAY.COM
PHONE: (951) 278-1371 FAX: (951) 278-1371

PROJECT TEAM

POWER:

COMPANY: SDG&E TEL: (858) 636-3907
CONTACT: DAN BARRIOS MOB: (858) 204-1803
E-MAIL: DBARRIOS@SEMPRAUTILITIES.COM

TELCO:

COMPANY: SBC TEL: (619) 574-4326
CONTACT: LOIS GOTTFREDSON FAX: (619) 260-1526
E-MAIL: LR1343@SBC.COM

UTILITY PROVIDERS

SHEET	DESCRIPTION	REV.
T1	TITLE SHEET	—
A1	SITE PLAN	—
A2	EQUIPMENT LAYOUT PLAN	—
A3	ELEVATIONS	—
A4	ELEVATIONS	—
LS1	SITE SURVEY	—
LS2	SITE SURVEY	

7 SHEETS TOTAL

ISSUED FOR: ZONING
JURISDICTION: COUNTY OF SAN DIEGO

SHEET INDEX

DO NOT SCALE DRAWINGS

GENERAL CONTRACTOR NOTES

DCI PACIFIC
ARCHITECTURE · ENGINEERING · PLANNING
2450 DUPONT DRIVE, IRVINE, CA 92612
PHONE: (949) 475-1000 FAX: (494) 475-1001

Sprint
Together with NEXTEL
SPRINT - NEXTEL
310 COMMERCE, IRVINE, CA 92602
PHONE: (714) 368-3500 FAX: (714) 368-3501

PROJECT IDENTIFICATION:
CA-8949-A
BANDY CANYON
15738 HIGHLAND VALLEY ROAD
ESCONDIDO, CA 92025
SAN DIEGO COUNTY

CURRENT ISSUE DATE: 06/08/06

ISSUED FOR: ZONING

APPROVALS:

APPROVED BY:	INITIALS:	DATE:
LANDLORD		
LEASING		
R.F.		
E/P		
C.P.M.		

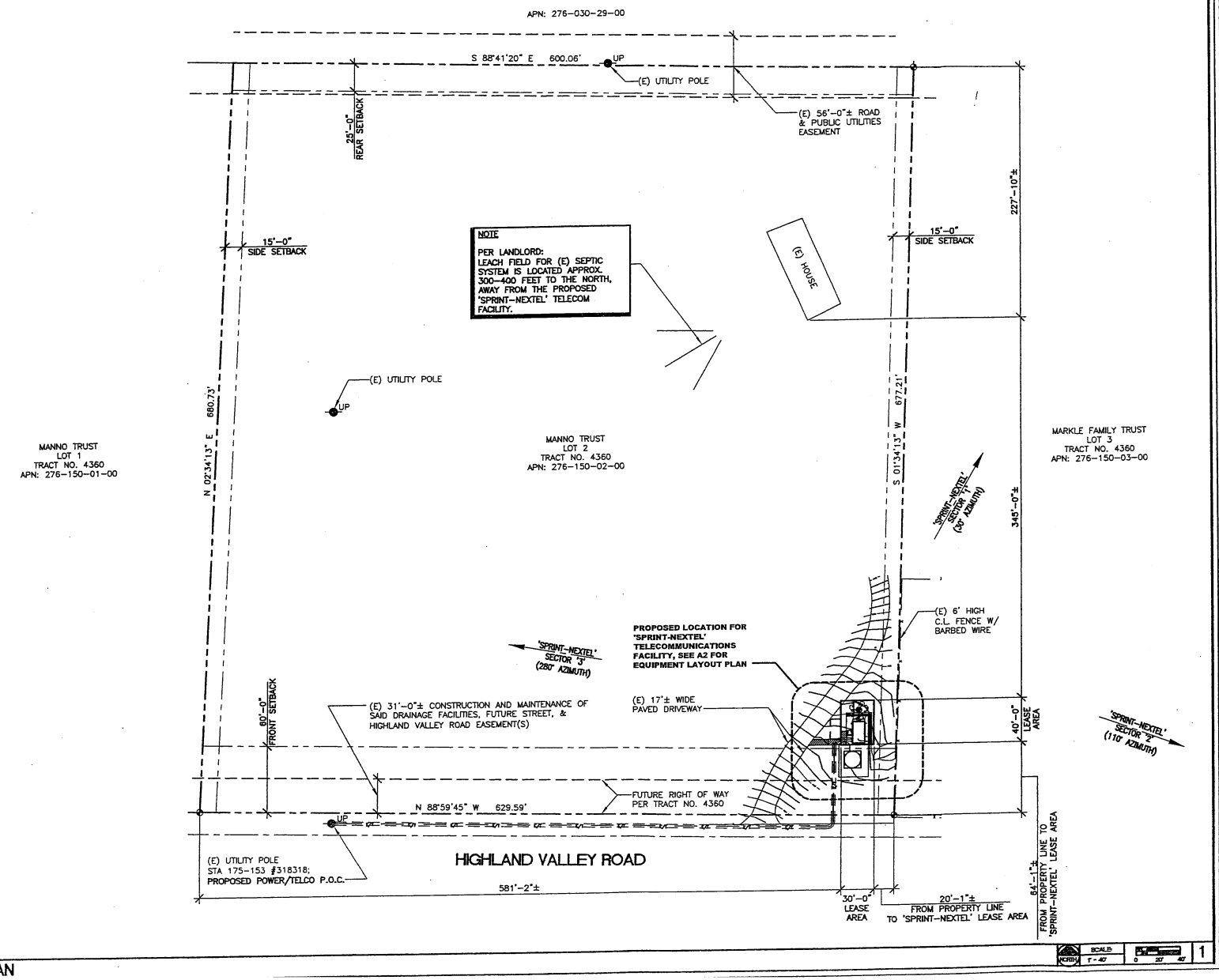
DRAWN BY:	CHK:	APV:
HN/RS	BOK	DKD

ISSUE STATUS:

△	DATE:	DESCRIPTION:	BY:
—	6/08/05	PRELIMINARY ZD	HN
—	07/20/05	ZD COMMENTS	RS
—	08/08/05	FINAL ZD	RS
—	11/15/05	100% ZD	JEP
1	06/08/06	FENCE HEIGHT INCREASE	LR

SHEET TITLE: TITLE SHEET

SHEET NUMBER: T1
ISSUE LEVEL:
BANDY CANYON CA-8949-A



SITE PLAN

DCI PACIFIC
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PHONE: (949) 475-1000 FAX: (494) 475-1001

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ZONING

APPROVALS:

APPROVED BY:	INITIALS:	DATE:
LANDLORD		
LEASING		
R.F.		
E/P		
C.P.M.		

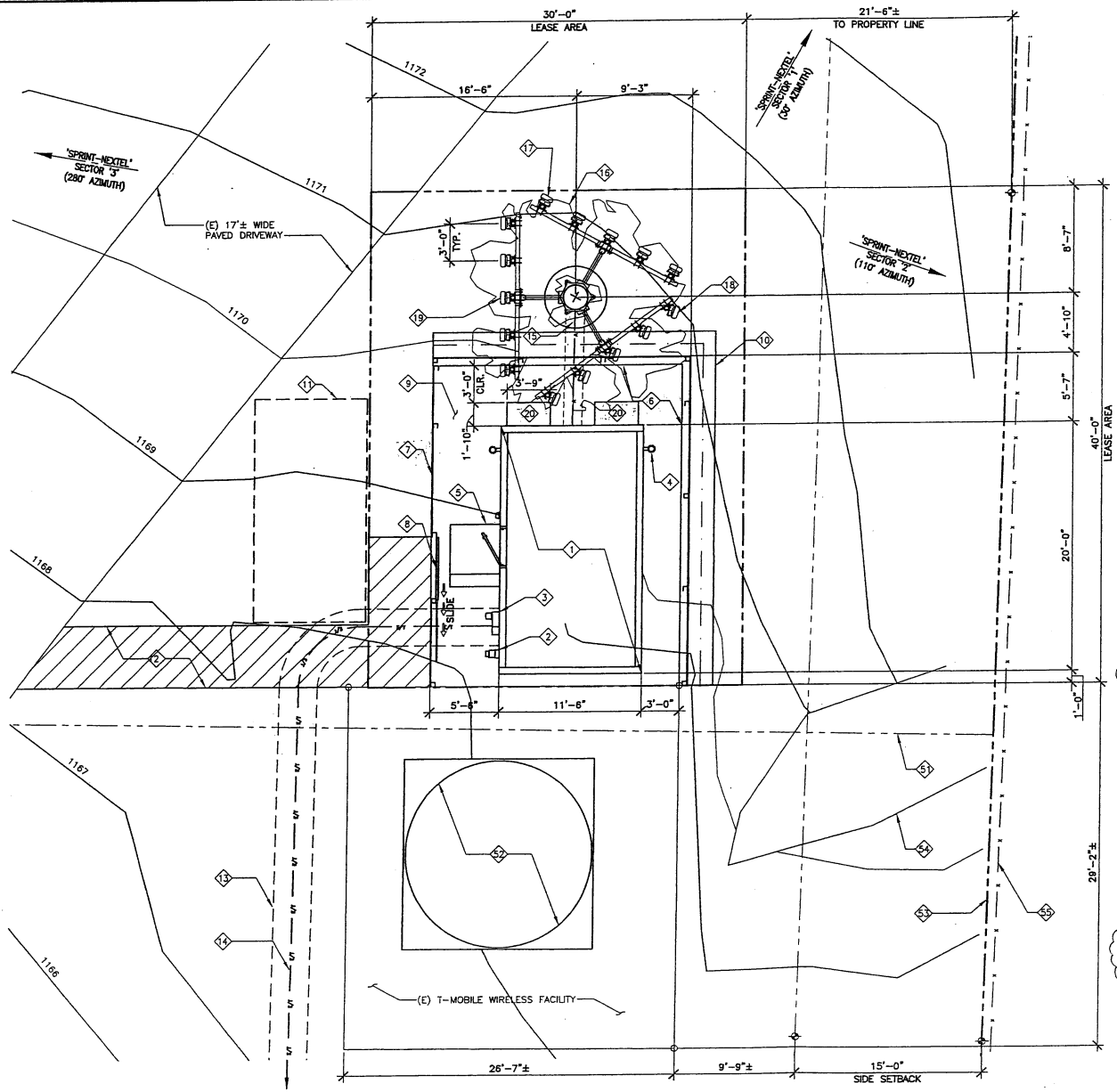
DRAWN BY:	CHK:	APV:
HN/RS	BOK	DKD

ISSUE STATUS:

	DATE:	DESCRIPTION:	BY:
—	6/06/05	PRELIMINARY ZD	HN
—	07/20/05	ZD COMMENTS	RS
—	08/08/05	FINAL ZD	RS
—	11/15/05	100% ZD	JEP
1	06/06/06	FENCE HEIGHT INCREASE	LR

SHEET TITLE:
SITE PLAN

SHEET NUMBER: A1
ISSUE LEVEL:
BANDY CANYON CA-8949-A



KEYNOTES

1. PROPOSED "SPRINT-NEXTEL" 11'-6" X 20'-0" "EARTHTONE" AGGREGATE EQUIPMENT SHELTER MOUNTED ON CONCRETE PAD
2. PROPOSED "SPRINT-NEXTEL" EMERGENCY GENERATOR RECEPTACLE (EGR) MOUNTED ON "EARTHTONE" AGGREGATE EQUIPMENT SHELTER AT 36" ABOVE CONCRETE PAD SURFACE
3. PROPOSED "SPRINT-NEXTEL" METER/MAIN LOCATION TO BE DETERMINED & FINALIZED BY SERVICE PLANNER
4. PROPOSED "SPRINT-NEXTEL" GPS ANTENNA MOUNTED TO CLEAR TOP OF "EARTHTONE" AGGREGATE EQUIPMENT SHELTER, 2 TOTAL
5. PROPOSED 4' WIDE CONCRETE STOOP AND STEP, AS REQUIRED
6. PROPOSED "SPRINT-NEXTEL" 7'-6" HIGH WOOD FENCE (AGL) ON TOP OF 3'-0" HIGH RETAINING WALL (AS MAY BE REQ'D), FINISHED TO MATCH (E) FENCE (NOISE CONTROL ELEMENT) △1
7. PROPOSED "SPRINT-NEXTEL" 10'-6" HIGH WOOD FENCE (AGL) TO MATCH (E) FENCE (NOISE CONTROL ELEMENT) △1
8. PROPOSED 5'-0" WIDE SLIDING ACCESS GATE
9. PROPOSED "SPRINT-NEXTEL" CONCRETE PAD
10. PROPOSED "SPRINT-NEXTEL" 2' WIDE SWALE
11. PROPOSED LOCATION OF "SPRINT-NEXTEL" MAINTENANCE PARKING SPACE (SHOWN HIDDEN)
12. PROPOSED "SPRINT-NEXTEL" 5'-0" WIDE WALKWAY
13. PROPOSED "SPRINT-NEXTEL" 5'-0" WIDE UTILITY EASEMENT
14. PROPOSED "SPRINT-NEXTEL" TRENCH FOR POWER & TELCO CONDUITS (SEE A1 FOR P.O.C.)
15. PROPOSED "SPRINT-NEXTEL" COAX CABLE TRENCH
16. PROPOSED "SPRINT-NEXTEL" 35'-0" HIGH MONOBROADLEAF
17. PROPOSED "SPRINT-NEXTEL" SECTOR '1' ANTENNAS, 30° AZIMUTH (5 ANTENNAS PER SECTOR)
18. PROPOSED "SPRINT-NEXTEL" SECTOR '2' ANTENNAS, 110° AZIMUTH (5 ANTENNAS PER SECTOR)
19. PROPOSED "SPRINT-NEXTEL" SECTOR '3' ANTENNAS, 280° AZIMUTH (5 ANTENNAS PER SECTOR)
20. PROPOSED WALL MOUNTED HVAC UNIT MARVAIR COMPAC II MODEL #AVP60ACA, 2-TOTAL OR EQUIVALENTLY SIZED UNITS WITH AN ALLOWABLE MAXIMUM A-WEIGHTED SOUND PRESSURE LEVEL RATING OF 74.9 dBA AT REFERENCE DISTANCE OF 5 FEET. △1

21 TO 50 NOT USED

51. 60' FRONT SETBACK LINE
52. (E) T-MOBILE WATER TANK
53. (E) PROPERTY LINE
54. (E) ROCK
55. (E) 6' HIGH C.L. FENCE W/ BARBED WIRE
56. (E) 8'-0" HIGH WOOD FENCE

△1

NOTE:

-WOODEN FENCING WILL ENCLOSE THE ENTIRE EQUIPMENT SHELTER. THE MINIMUM HEIGHT OF THE WOODEN FENCING IS 10'-6" HIGH RELATIVE TO THE PAD GRADE ELEVATION

-REQUIRED SOUND ATTENUATION BARRIERS SHOULD BE SOLID AND CONSTRUCTED OF MASONRY, WOOD, PLASTIC, FIBERGLASS, STEEL, OR A COMBINATION OF THESE MATERIALS, WITH NO CRACKS OR GAPS THROUGH OR BELLOW THE WALL. IF WOOD IS USED, IT CAN BE TONGUE AND GROOVE AND MUST BE ONE-INCH THICK OR HAVE A MINIMUM SURFACE DENSITY OF 3 1/2 POUNDS PER SQUARE FOOT

EQUIPMENT LAYOUT PLAN

SCALE: 1/4"=1'-0" | 1

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PROJECT IDENTIFICATION:
CA-8949-A
BANDY CANYON
15738 HIGHLAND VALLEY ROAD
ESCONDIDO, CA 92025
SAN DIEGO COUNTY

CURRENT ISSUE DATE:
06/08/06

ISSUED FOR:
ZONING

APPROVALS:

APPROVED BY:	INITIALS:	DATE:
LANDLORD		
LEASING		
R.F.		
E/P		
C.P.M.		

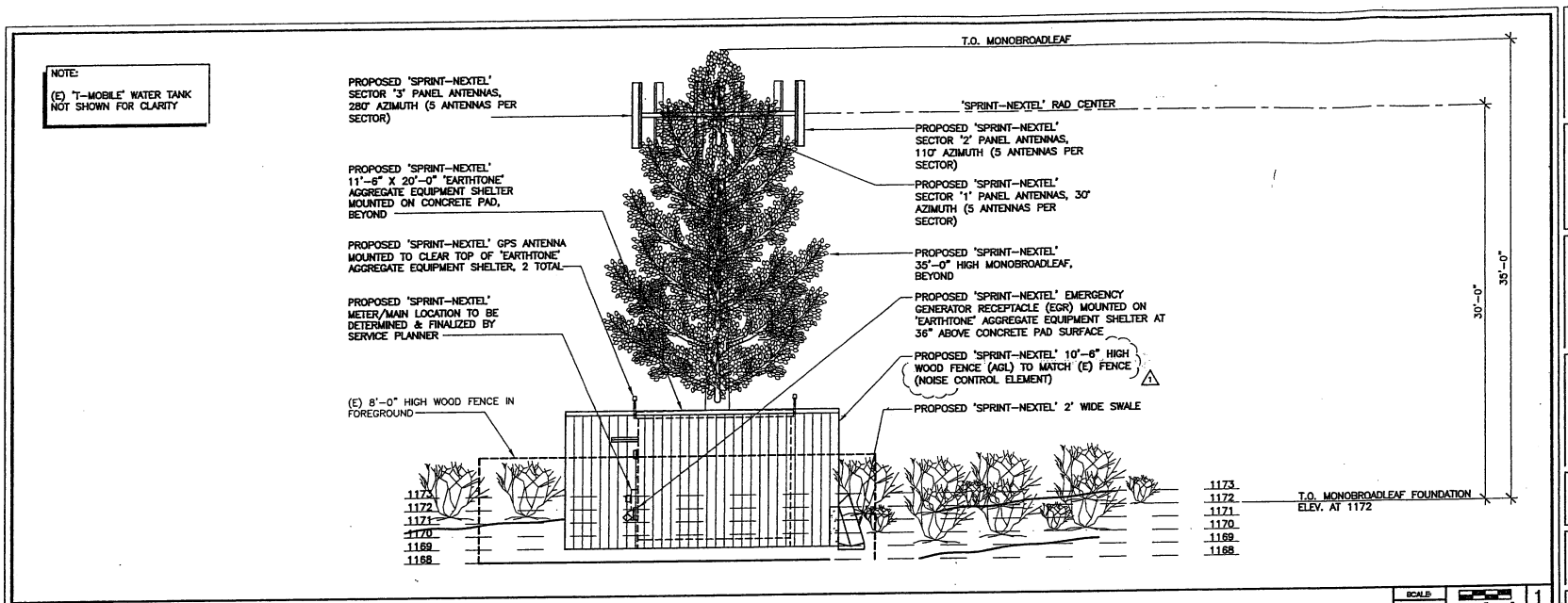
DRAWN BY:	CHK:	APV:
HN/RS	BOK	DXD

ISSUE STATUS:

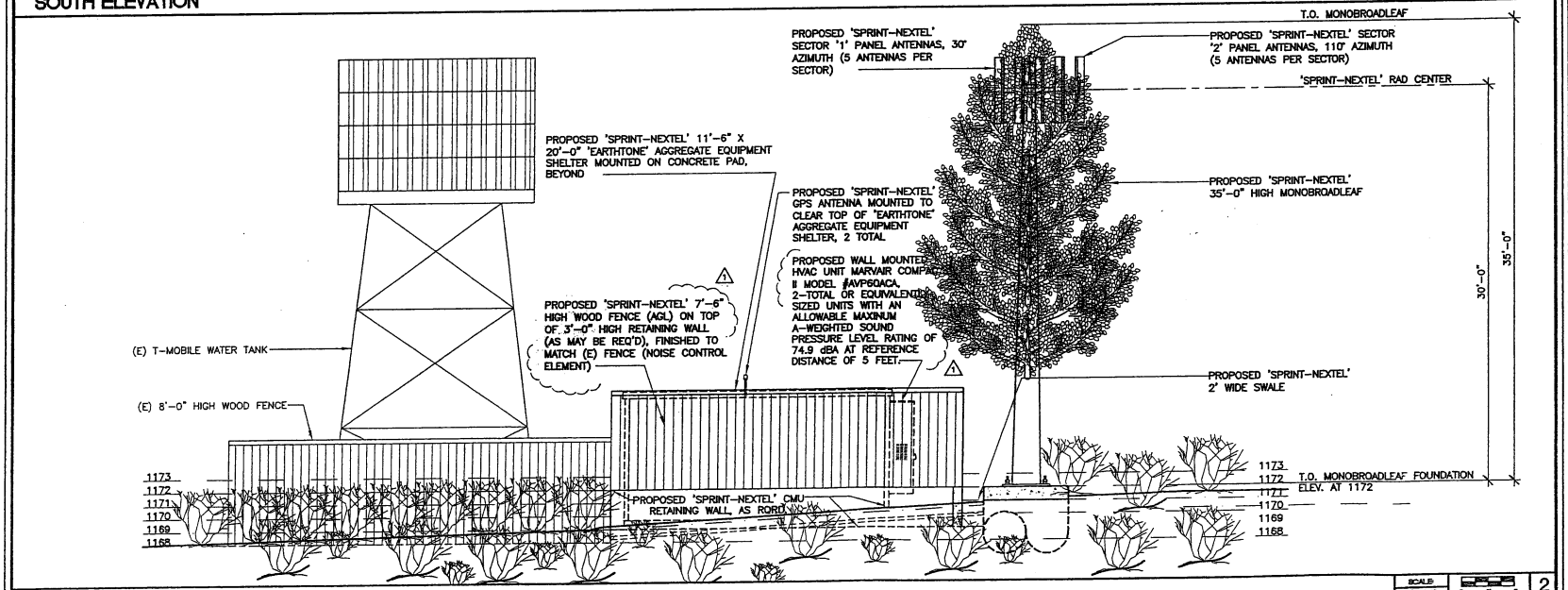
△	DATE:	DESCRIPTION:	BY:
—	5/08/05	PRELIMINARY ZD	HN
—	07/20/05	ZD COMMENTS	RS
—	08/08/05	FINAL ZD	RS
—	11/15/05	100% ZD	JEP
△	06/08/06	FENCE HEIGHT INCREASE	LR

SHEET TITLE:
EQUIPMENT LAYOUT PLAN

SHEET NUMBER: **A2**
ISSUE LEVEL:
BANDY CANYON CA-8949-A



SOUTH ELEVATION



EAST ELEVATION

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PHONE: (714) 368-3500 FAX: (714) 368-3501

PROJECT IDENTIFICATION:
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ESCONDIDO, CA 92025
SAN DIEGO COUNTY

CURRENT ISSUE DATE:
06/08/06

ISSUED FOR:
ZONING

APPROVALS:

APPROVED BY:	INITIALS:	DATE:
LANDLORD		
LEASING		
R.F.		
E/P		
C.P.M.		

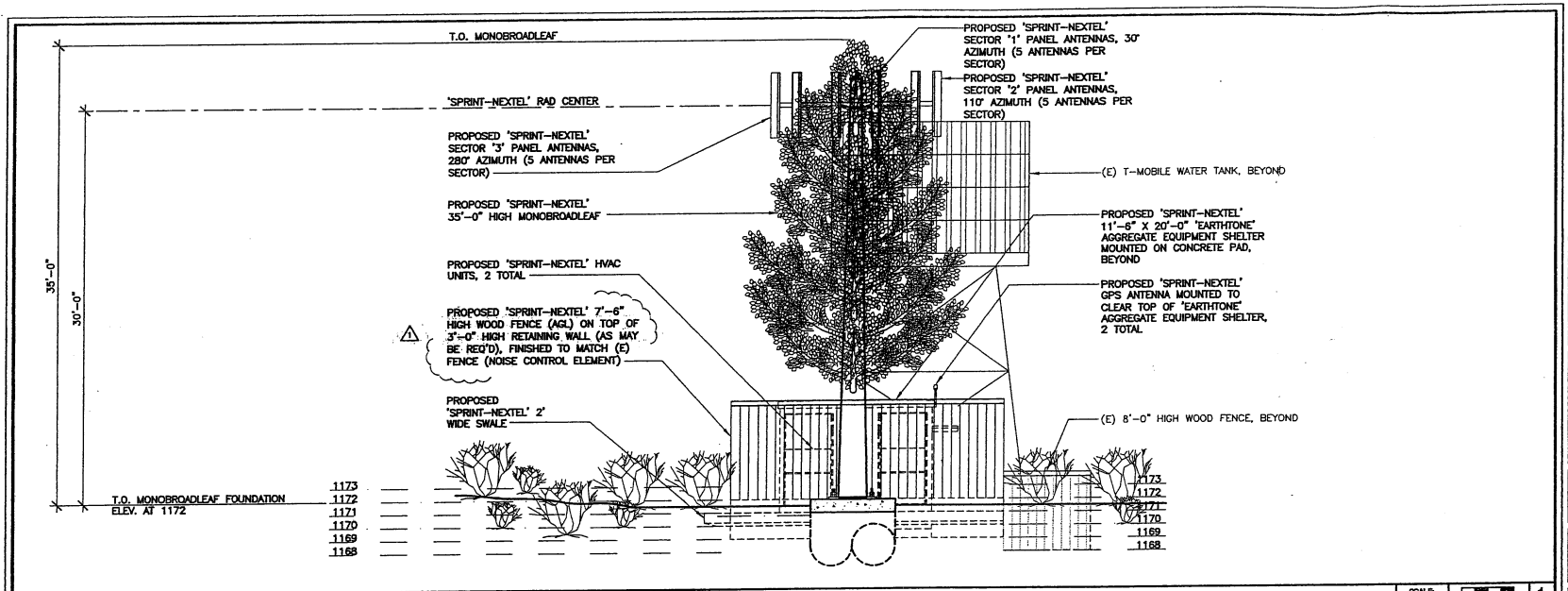
DRAWN BY:	CHK:	APV:
HN/RS	BOK	DKD

ISSUE STATUS:

Δ	DATE:	DESCRIPTION:	BY:
—	5/05/05	PRELIMINARY ZD	HN
—	07/20/05	ZD COMMENTS	RS
—	08/08/05	FINAL ZD	RS
—	11/15/05	100% ZD	JEP
1	06/08/06	FENCE HEIGHT INCREASE	LR

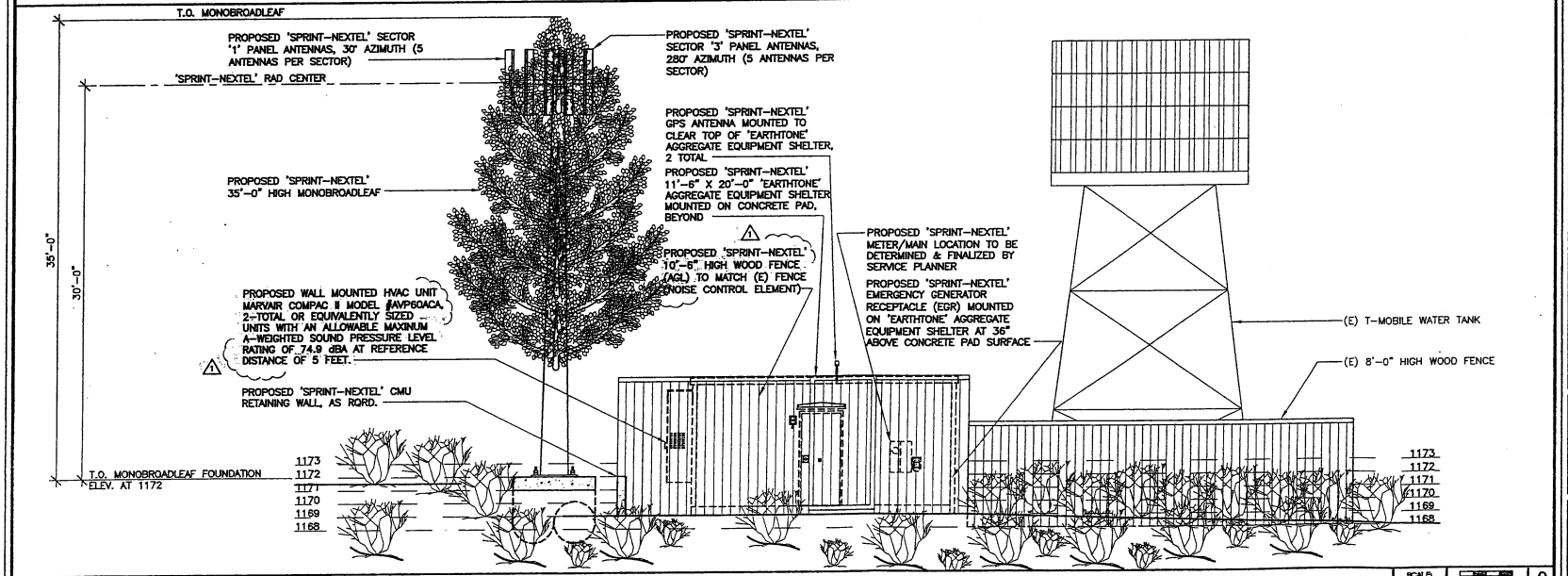
SHEET TITLE:
ELEVATIONS

SHEET NUMBER: **A3**
ISSUE LEVEL:
BANDY CANYON CA-8949-A



NORTH ELEVATION

SCALE: 1/4"-1'-0" 0 2 4 — 1



WEST ELEVATION

SCALE: 1/4"-1'-0" 0 2 4 — 2

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SPRINT - NEXTEL
310 COMMERCE, IRVINE, CA 92602
PHONE: (714) 368-3500 FAX: (714) 368-3501

PROJECT IDENTIFICATION:
CA-8949-A
BANDY CANYON
15738 HIGHLAND VALLEY ROAD
ESCONDIDO, CA 92025
SAN DIEGO COUNTY

CURRENT ISSUE DATE:
06/08/06

ISSUED FOR:
ZONING

APPROVALS:

APPROVED BY:	INITIALS:	DATE:
LANDLORD		
LEASING		
R.F.		
E/P		
C.P.M.		

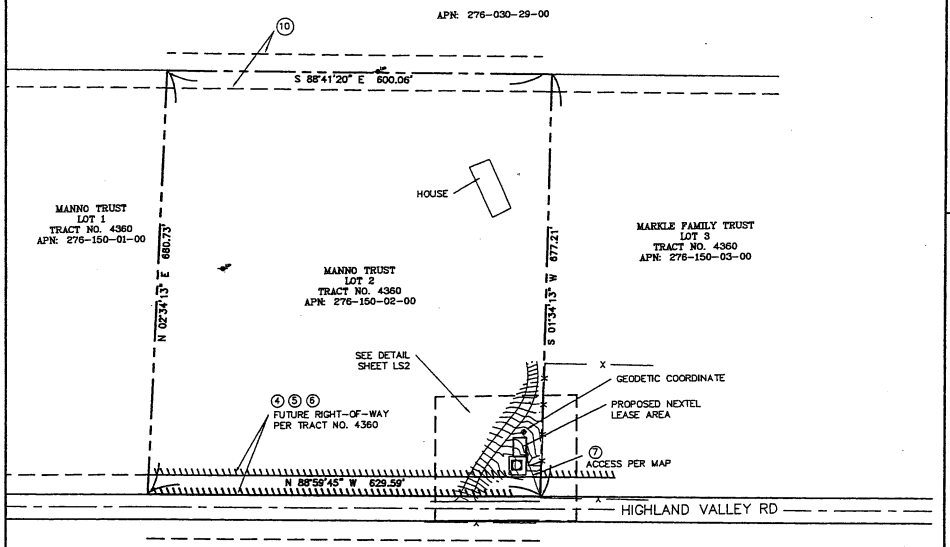
DRAWN BY:	CHK:	APV:
HN/RS	BOK	DKD

ISSUE STATUS:

△	DATE:	DESCRIPTION:	BY:
—	6/06/05	PRELIMINARY ZD	HN
—	07/20/05	ZD COMMENTS	RS
—	08/08/05	FINAL ZD	RS
—	11/15/05	100% ZD	JEP
1	06/08/06	FENCE HEIGHT INCREASE	LR

SHEET TITLE:
ELEVATIONS

SHEET NUMBER: **A4**
ISSUE LEVEL:
BANDY CANYON CA-8949-A

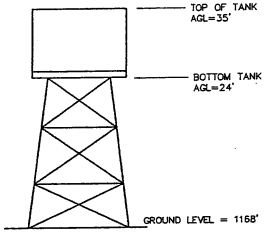


OVERALL SITE PLAN

SCALE: 1"=100'

ADD. LEGEND

EP	EDGE OF PAVEMENT
NG	GROUND ELEVATION
ROCK	EDGE OF ROCK
TANK	TANK RIM
	BOUNDARY LINE
	CENTERLINE
	MISC. PROPERTY LINE
	MISC. TIE LINE
	RIGHT-OF-WAY LINE
	EASEMENT LINE
x	FENCE LINE



FALSE WATER TANK

SCALE: 1"=10'

TITLE REPORT NOTES CONT.:

ITEM #8 – The rights of the public in and to that portion of the herein described property lying within those certain roads as shown by the maps of old survey no. 14 and old survey no. 95 in the office of the county surveyor of San Diego County.
(DOES NOT APPEAR TO EFFECT SAID PROPERTY)

ITEM #9 – Easement(s) for the purposes(s) shown below and rights incidental thereto as granted in a document.

Granted to: Sante & Youngberg
Purpose: Right-Of-Way
Recorded: April 28, 1969, Instrument No. 73398, of Official Records
(EXACT LOCATION IS NOT DISCLOSED OF RECORD)

ITEM #10 – Easement(s) for the purposes(s) shown below and rights incidental thereto as granted in a document.

Granted to: Thomas Phillip Markle, et ux
Purpose: Road and public utilities
Recorded: October 12, 1972, Instrument No. 274375, of Official Records
(AS SHOWN HEREON)

ITEM #11 – Easement(s) for the purposes(s) shown below and rights incidental thereto as granted in a document.

Granted to: Karl W. Kesling, et ux
Purpose: Road
Recorded: April 11, 1972, Instrument No. 88782, of Official Records
(DOES NOT APPEAR TO EFFECT SAID PROPERTY)

ITEM #13 – Easement(s) for the purposes(s) shown below and rights incidental thereto as granted in a document.

Granted to: Ramona Municipal Water District
Purpose: Public utilities
Recorded: January 27, 1976, Instrument No. 76-024813, of Official Records
(DOES NOT APPEAR TO EFFECT SAID PROPERTY)

ITEM #15 – Easement(s) for the purposes(s) shown below and rights incidental thereto as granted in a document.

Granted to: San Diego Gas & Electric Company
Purpose: Public utilities
Recorded: April 24, 1980, Instrument No. 80-139412, of Official Records
(EXACT LOCATION IS NOT DISCLOSED OF RECORD)

NEXTEL®
NEXTEL COMMUNICATIONS
5761 COPLEY DR, SUITE 100, SAN DIEGO, CA 92111
Phone: (858) 650-4200
Fax: (858) 650-4202

PROJECT INFORMATION:

BANDY CANYON
CA 8949
15738 HIGHLAND VALLEY RD
ESCONDIDO, CA 92025
SAN DIEGO COUNTY

CURRENT ISSUE DATE: 8/04/2005

ISSUED FOR: ZONING

REV.:	DATE:	DESCRIPTION:	BY:
1.	6/07/05	FIRST SUBMITTAL	DAF
2.	8/04/05	TITLE REVIEW	DAF

PLANS PREPARED BY:

DCI PACIFIC
ARCHITECTURE - ENGINEERING - PLANNING
2450 DUPONT DRIVE - CA 92612 949.475.1000

CONSULTANT:

FLOYD SURVEYING, INC.
"A PLS EVERY STEP OF THE WAY"
2553 WAGON WHEEL RD, NORCO, CA 92860
OFFICE/FAX (951) 278-1371
EMAIL: floyd_surveying@discovery.com

DRAWN BY:	CHK.:	APV.:
DAF	DAF	DAF

LICENSURE:

PROFESSIONAL LAND SURVEYOR — David A. Floyd — No. 7676 — Exp. 12/31/2006 — STATE OF CALIFORNIA

SIGNATURE DATE

SHEET TITLE: SITE SURVEY GENERAL INFORMATION

SHEET NUMBER:	REVISION:
LS1	1 OF 2
	JOB# DCI-513

PROPERTY LEGAL DESCRIPTION

LOT 2 OF COUNTY OF SAN DIEGO TRACT NO. 4360, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 11332, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, SEPTEMBER 18, 1985.

LEASE AREA DESCRIPTION

PARCEL 1: (Lease Parcel Area)

BEING A PORTION OF LOT 2 OF COUNTY OF SAN DIEGO TRACT NO. 4360, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 11332, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, SEPTEMBER 18, 1985, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID LOT 2, SAID SOUTHERLY LINE OF SAID LOT 2 BEING SOUTH 88°59'45" EAST, WITH ALL BEARINGS HEREIN RELATIVE THERETO; THENCE NORTH 19°35'55" WEST, A DISTANCE OF 68.66 FEET TO THE POINT OF BEGINNING; THENCE, THE FOLLOWING FOUR (4) COURSES:

1) NORTH 89°52'22" WEST, A DISTANCE OF 20.67 FEET; THENCE
2) NORTH 00°07'38" EAST, A DISTANCE OF 30.10 FEET; THENCE
3) SOUTH 89°52'22" EAST, A DISTANCE OF 20.67 FEET; THENCE
4) SOUTH 00°07'38" WEST, A DISTANCE OF 30.10 FEET TO THE POINT OF BEGINNING.

CONTAINING 622 SQUARE FEET, MORE OR LESS.

1) This is not a boundary survey. This is a specialized topographic map. The property lines and easements shown hereon are from record information as noted hereon. Floyd Surveying, Inc. translated the topographic survey to record information using the two found monuments shown hereon. No title research was performed by Floyd Surveying, Inc.

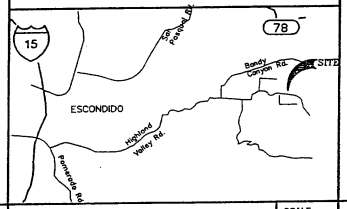
2) Any changes made to the information on this plan, without the written consent of Floyd Surveying, Inc. relieves Floyd Surveying, Inc. of any and all liability.

3) These drawings & specifications are the property & copyright of Floyd Surveying, Inc. & shall not be used on any other work except by agreement with the Surveyor. Written dimensions shall take preference over scaled & shall be verified on the job site. Any discrepancy shall be brought to the notice of the Surveyor prior to commencement of any work.

4) Field survey completed on June 6, 2005.

GENERAL NOTES

VICINITY MAP



SCALE: N.T.S.

TITLE REPORT NOTES:

THE FOLLOWING EASEMENTS EFFECT SAID PARCEL AND ARE SHOWN HEREON. SEE PRELIMINARY TITLE REPORT NO.9711736 PREPARED BY FIDELITY NATIONAL TITLE COMPANY AND DATED MAY 23, 2005 FOR OTHER DOCUMENTS (NON-EASEMENTS) EFFECTING SAID PROPERTY.

ITEM #4 – Easement(s) for the purposes(s) shown below and rights incidental thereto as delineated or as offered for dedication, on the map of said tract.

Purpose: Construction and maintenance of said drainage facilities
(AS SHOWN HEREON)

ITEM #5 – Easement(s) for the purposes(s) shown below and rights incidental thereto as delineated or as offered for dedication, on the map of said tract.

Purpose: Future Street
(AS SHOWN HEREON)

ITEM #6 – Easement(s) for the purposes(s) shown below and rights incidental thereto as delineated or as offered for dedication, on the map of said tract.

Purpose: Highland Valley road
(AS SHOWN HEREON)

ITEM #7 – The fact that the ownership of said land does not include rights of access to or from the street, highway, or freeway abutting said land, such rights having been relinquished by the map of said Tract.
(AS SHOWN HEREON)

TITLE REPORT NOTES

OWNER'S NAME: GERARDO & ROSA CORDIANO

ASSESSOR'S PARCEL NUMBER(S) 276-150-02-00

(NAD 83; Epoch 2002)

	LATITUDE	LONGITUDE
SECTORS:	33°04'02.72" North	116°59'18.32" West

BASIS OF BEARINGS:
THE BEARINGS SHOWN HEREON ARE BASED ON TRUE NORTH AS DETERMINED BY G.P.S. OBSERVATIONS, USING TRIMBLE 5700/5800 RECEIVERS AND TRIMBLE GEODETIC OFFICE 1.60 SOFTWARE.

BASIS OF ELEVATIONS: NAVD 1988
ELEVATIONS ARE BASED ON GPS OBSERVATIONS FROM TWO NATIONAL GEODETIC SURVEY C.O.R.S. REFERENCE STATIONS: 1) PLO3, ELEVATION = 44.68' AND 2) BRIL, ELEVATION = 1651.18' WITH GEOID99 CORRECTIONS APPLIED.

SITE TEMPORARY BENCHMARK:
BENCHMARK IS A PK-NAIL/WASHER LOCATED ON THE EAST SIDE OF THE ASPHALT DRIVE. ELEVATION = 1176.09'. AS SHOWN HEREON.

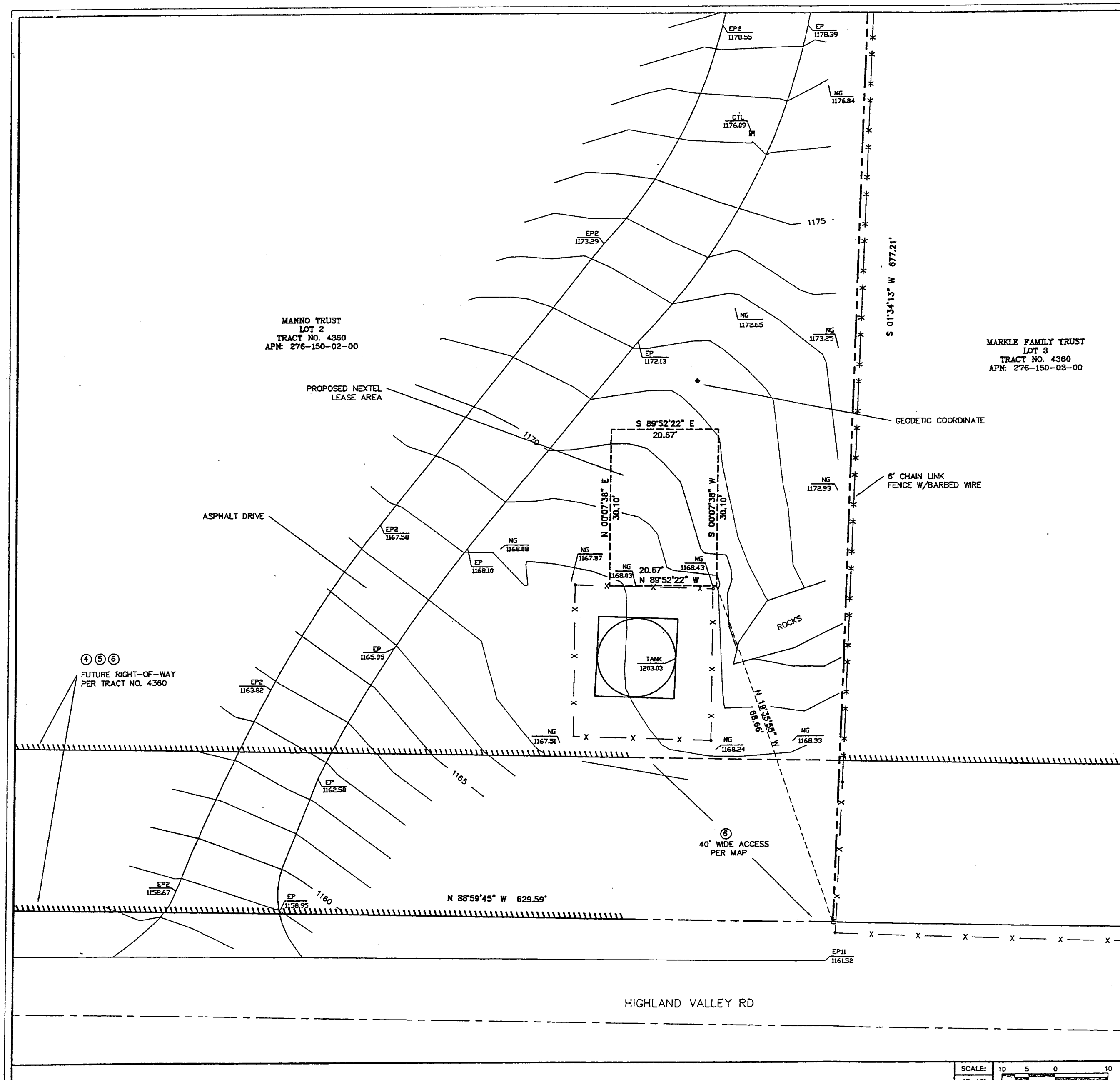
SITE DATA

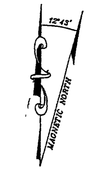
FEMA FLOOD ZONE DESIGNATION: *National Flood Insurance Program:*
County: San Diego Effective Date: 6/19/1997
Panel: 1103 Community-Panel Number: 06073C1103 F
The Flood Zone Designation for this site is: ZONE – X

FEMA FLOOD ZONE INFORMATION

AC	AIR CONDITIONER	PM	PARCEL MAP
	ASPHALT		PARKING METER
BC	BOTTOM OF CURB		POWER POLE
BLDG	BUILDING	ROS	RECORD OF SURVEY
	BOLLARD		ROOF DRAIN
	CONCRETE		ROOF OUTLET
	CONTROL POINT	RTOP	ROOF TOP
	DOOR		ROOF VENT
	ELECTRIC BOX		SANITARY SEWER MANHOLE
x x	FENCE		SEWER CLEAN OUT
	FIRE HYDRANT		SIGN POST
	FOUND MONUMENT	EL=00.0	SPOT ELEVATION
	GAS METER		SPRINKLER
	GAS VALVE		STORM DRAIN MANHOLE
	GPS POINT		TELEPHONE BOX
	GUARD RAIL		TELEPHONE MANHOLE
	GUY ANCHOR		TELEPHONE PEDISTAL
HETR	HEATER		TEMPORARY BENCHMARK
	INLET	4	TITLE REPORT EXCEPTION
	IRRIGATION BOX	TC	TOP OF CURB
	IRRIGATION VALVE		TRAFFIC SIGNAL BOX
	LIGHT BUILDING		TRAFFIC SIGNAL POLE
	LIGHT GROUND		TREE
	LIGHT STREET		UTILITY POLE
( )	MEASURED DISTANCE		WATER METER
	MONITORING WELL		

LEGEND





ADD. LEGEND

EP	EDGE OF PAVEMENT
NG	GROUND ELEVATION
ROCK	EDGE OF ROCK
TANK	TANK RIM
	BOUNDARY LINE
	CENTERLINE
	MISC. PROPERTY LINE
	MISC. TIE LINE
	RIGHT-OF-WAY LINE
	EASEMENT LINE
— X —	FENCE LINE

1) This is not a boundary survey. This is a specialized topographic map. The property lines and easements shown hereon are from record information as noted hereon. Floyd Surveying, Inc. translated the topographic survey to record information using the two found monuments shown hereon. No title research was performed by Floyd Surveying, Inc.

2) Any changes made to the information on this plan, without the written consent of Floyd Surveying, Inc. relieves Floyd Surveying, Inc. of any and all liability.

3) These drawings & specifications are the property & copyright of Floyd Surveying, Inc. & shall not be used on any other work except by agreement with the Surveyor. Written dimensions shall take preference over scaled & shall be verified on the job site. Any discrepancy shall be brought to the notice of the Surveyor prior to commencement of any work.

4) Field survey completed on June 6, 2005.

AC	AIR CONDITIONER	PM	PARCEL MAP
	ASPHALT		PARKING METER
BC	BOTTOM OF CURB		POWER POLE
BLDG	BUILDING	ROS	RECORD OF SURVEY
	BOLLARD		ROOF DRAIN
	CONCRETE		ROOF OUTLET
	CONTROL POINT	RTOP	ROOF TOP
	DOOR		ROOF VENT
	ELECTRIC BOX		SANITARY SEWER MANHOLE
	FENCE		SEWER CLEAN OUT
	FIRE HYDRANT		SIGN POST
	FOUND MONUMENT	EL=00.0	SPOT ELEVATION
	GAS METER		SPRINKLER
	GAS VALVE		STORM DRAIN MANHOLE
	GPS POINT		TELEPHONE BOX
	GUARD RAIL		TELEPHONE MANHOLE
	GUY ANCHOR		TELEPHONE PEDISTAL
HETR	HEATER		TEMPORARY BENCHMARK
	INLET	④	TITLE REPORT EXCEPTION
	IRRIGATION BOX	TC	TOP OF CURB
	IRRIGATION VALVE		TRAFFIC SIGNAL BOX
	LIGHT BUILDING		TRAFFIC SIGNAL POLE
	LIGHT GROUND		TREE
	LIGHT STREET		UTILITY POLE
( )	MEASURED DISTANCE		WATER METER
	MONITORING WELL		

LEGEND

NEXTEL®

NEXTEL COMMUNICATIONS
5761 COPLEY DR, SUITE 100, SAN DIEGO, CA 92111
Phone: (858) 650-4200
Fax: (858) 650-4202

PROJECT INFORMATION:
BANDY CANYON
CA 8949
15738 HIGHLAND VALLEY RD
ESCONDIDO, CA 92025
SAN DIEGO COUNTY

CURRENT ISSUE DATE:
8/04/2005

ISSUED FOR:
ZONING

REV.:	DATE:	DESCRIPTION:	BY:
1.	6/07/05	FIRST SUBMITTAL	DAF
2.	8/04/05	TITLE REVIEW	DAF

PLANS PREPARED BY:
DCI PACIFIC
ARCHITECTURE - ENGINEERING - PLANNING
2450 DUPONT DRIVE - CA 92612 949.475.1000

CONSULTANT:
FLOYD SURVEYING, INC.
"A PLS EVERY STEP OF THE WAY"
2553 WAGON WHEEL RD, NORCO, CA 92860
OFFICE/FAX (951) 278-1371
EMAIL: floyd_surveying@directway.com

DRAWN BY:	CHK.:	APV.:
DAF	DAF	DAF

LICENSURE:
PROFESSIONAL LAND SURVEYOR David A. Floyd No. 7676 Exp. 12/31/2004 STATE OF CALIFORNIA

SIGNATURE DATE

SHEET TITLE:
SITE SURVEY
GENERAL INFORMATION

SHEET NUMBER: LS2
REVISION:
2 OF 2
JOB# DCI-513

APPENDIX B

Pertinent Sections of the County of San Diego Scoping Letter, Dated January 25, 2006

ATTACHMENT B
Noise

Project Specific Information:
Preliminary acoustical estimates indicate that without site-specific noise mitigation measures, this project may generate noise levels that exceed the applicable limits of the County noise regulations. For this reason, staff requires a site-specific noise study by a County-certified acoustical consultant to evaluate any on-site exterior noise generators to be used on the project site such as air conditioners and to demonstrate they comply with the property line sound level limits of the County Noise Ordinance (Section 36.404). Please refer to the Ordinance discussion for additional details (See below).

Noise Ordinance:
A staff review of the project information plus field measurements from other projects indicates that the proposed Marvair Compac II air conditioners potentially exceeds the sound level limits at the nearest property line 22-feet away. The County Noise Ordinance does not permit noise levels that impact adjoining properties or exceed County Noise Standards (Section 36.404). The project site as well as adjacent land uses are zoned A-70 that allows a one-hour average sound level of 50 decibels (dBA) from 7 a.m. to 10 p.m. and 45 decibels (dBA) from 10 p.m. to 7 a.m. In order for the Department to make a determination on the project's conformance with County noise standards, the applicant must demonstrate that the hourly average sound levels do not exceed 45 decibels (A) at the property line, as the most stringent Ordinance condition for the project. The potential noise impact to the on-site residence is normally included in this analysis.

To determine conformance to the County Noise Ordinance, a noise study is required and it is essential that this component of this analysis include the following information:

(1). Manufacturers Spec Sheet for all noise producing equipment on-site that identifies the ARI standard and/or decibel (dBA) per range. It is important to note that all noise producing sources must be included and to use field measurements whenever they become available. In previous studies, Marvair equipment was 2 to 4 decibels over the stated performance value in the manufacturer data sheets.

(2). Additional plot plans that identifies the site location of all noise sources in relation to property lines. It is essential to address all potential noise sources on-site and to include a discussion related to openings within all surrounding walls or fences, such as driveways, fencing and gates.

(3). Hours of operation and activity level at each hour.

General information: A noise analysis is needed to determine whether or not noise levels exceed San Diego County standards. Noise analysis shall occur when the

project is adjacent to heavily traveled roads, railroad tracks, airports, or heavy industrial operations. Noise analysis may also be required for a project that generate high levels of noise either through activities directly associated with the proposal or major increases in traffic generated by the proposal (direct and cumulative impacts).

If the noise impacts are associated with traffic movements, airports, or other transportation activities, a noise analysis shall utilize field measurements and projected transportation noise levels to determine the potential for impacts to present and future residents of the project. The noise analysis must conform to the Noise Element of the San Diego County General Plan.

If the noise impacts are associated with activities on the site, such as rock crushing or some other proposed activity, the noise analysis shall include estimates of noise generation potential from the site utilizing measurements from similar activities that are already in existence. The noise analysis must conform to the San Diego County Noise Ordinance.

<u>The Noise Study must consider the combined noise of the two telecommunications facilities (ZAP 01-109 Cingular- Cordiano Grove) and the subject project for noise compliance.</u>

APPENDIX C

San Diego County Code, Section 36.404, Sound Level Limits

Section 36.404

SECTION 36.404 SOUND LEVEL LIMITS

Unless a variance has been applied for and granted pursuant to this chapter, it shall be unlawful for any person to cause or allow the creation of any noise to the extent that the one-hour average sound level, at any point on or beyond the boundaries of the property on which the sound is produced, exceeds the applicable limits set forth below except that construction noise level limits shall be governed by Section 36.410.

ZONE	TIME	APPLICABLE LIMIT ONE-HOUR AVERAGE SOUND LEVEL (DECIBELS)
R-S, R-D, R-R, R-MH, A-70, A-72, S-80, S-81, S-87, S-88, S-90, S-92, R-V, AND R-U. Use regulations with a density of less than 11 dwelling unit per acre.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	50 45
R-RO, R-C, R-M, C-30, S-86, R-V AND R-U Use regulations with a density of 11 or more dwelling units per acre.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50
S-94 and all other commercial zones	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55
M-50, M-52, M-54	Anytime	70
S-82, M-58, and all other industrial zones	Anytime	75

If the measured ambient level exceeds the applicable limit noted above, the allowable one-hour average sound level shall be the ambient noise level. The ambient noise level shall be measured when the alleged noise violation source is not operating.

The sound level limit at a location on a boundary between two (2) zoning districts is the arithmetic mean of the respective limits for the two districts provided however, that the one-hour average sound level limit applicable to extractive industries including but not limited to borrow pits and mines, shall be 75 decibels at the property line regardless of the zone where the extractive industry is actually located.

Fixed-location public utility distribution or transmission facilities located on or adjacent to a property line shall be subject to the noise level limits of this section, measured at or beyond six (6) feet from the boundary of the easement upon which the equipment is located. (Amended by Ord. No. 7094 (N.S.) Effective 3-25-86.)

APPENDIX D

Cadna Analysis Data and Results

Unmitigated Nextel Only
Cadna/A-Berechnung
Version 3.5.115 (32 Bit)
Datei: C:\Documents and Settings\jsmith\Desktop\Current Project Files\A60210N1 Nextel-Sprint-Bandy Canyon CA-8949-A-Escondido-MB\A60210N1 Sprint Brandy Canyon ver 1 JDS.cna
Start: 23.02.06 12:55:35
Berechnungsparameter:

General	
Country	International
Max. Error (dB)	0
Max. Search Radius (m)	2000
Min. Dist Src to Rcvr	0
Partition	
Raster Factor	0.5
Max. Length of Section (m)	1000
Min. Length of Section (m)	1
Min. Length of Section (%)	0
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960
Reference Time Night (min)	480
Daytime Penalty (dB)	0
Recr. Time Penalty (dB)	6
Night-time Penalty (dB)	10
DTM	
Standard Height (m)	356.3
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src/Rcvr	100.00 100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.1
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°C)	20
rel. Humidity (%)	70
Ground Absorption G	1
Wind Speed for Dir.(m/s)	3
Roads (RLS-90)	
Strictly acc. to RLS-90	
Railways (Schall 03)	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (AzB)	
Strictly acc. to AzB	

Receiver: Northern Property Line
ID: R1
X: 181.94
Y: 203.33
Z: 361.71
Ground: 360.19

ISO	Bezeichnung	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	-24.8	-24.8	1	179	1.72	32	56.06	0	-4.8	9.94	0.56	0	0	0	0	0	0	0	-85.93	-85.93
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	68.3	68.3	1	179	1.72	63	56.06	0	-4.8	11.95	0.56	0.02	0	0	0	0	0	0	5.15	5.15
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	76	76	1	179	1.72	125	56.06	0	1.89	8.7	0.56	0.06	0	0	0	0	0	0	9.32	9.32
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	81.5	81.5	1	179	1.72	250	56.06	0	14.7	0	0.56	0.2	0	0	0	0	0	0	10.57	10.57

Marvair ComPac II HVAC Unit			182	24.39	357.5	356.71	0	82.6	82.6	1	181.5	2.99	2000	56.18	0	0	13.96	0.24	1.64	0	0	0	0	0	0	10.86	10.86
Marvair ComPac II HVAC Unit			182	24.39	357.5	356.71	0	75.2	75.2	1	181.5	2.99	4000	56.18	0	0	16.7	0.24	4.16	0	0	0	0	0	0	-1.81	-1.81
Marvair ComPac II HVAC Unit			182	24.39	357.5	356.71	0	68.7	68.7	1	181.5	2.99	8000	56.18	0	0	19.57	0.24	13.9	0	0	0	0	0	0	-20.93	-20.93
Limit. Value D/N:		0	0																										
Level D/N:		20.3341	20.3341																										

Berechnung, End 23.02.06 12:55:35 (0 s)

Unmitigated Combined
Cadna/A-Berechnung
Version 3.5.115 (32 Bit)
Datei: C:\Documents and Settings\jsmith\Desktop\Current Project Files\A60210N1 Nextel-Sprint-Bandy Canyon CA-8949-A-Escondido-MB\A60210N1 Sprint Brandy Canyon ver 1 JDS.cna
Start: 23.02.06 12:56:15
Berechnungsparameter:

General	
Country	International
Max. Error (dB)	0
Max. Search Radius (m)	2000
Min. Dist Src to Rcvr	0
Partition	
Raster Factor	0.5
Max. Length of Section (m)	1000
Min. Length of Section (m)	1
Min. Length of Section (%)	0
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960
Reference Time Night (min)	480
Daytime Penalty (dB)	0
Recr. Time Penalty (dB)	6
Night-time Penalty (dB)	10
DTM	
Standard Height (m)	356.3
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src/Rcvr	100.00 100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.1
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°C)	20
rel. Humidity (%)	70
Ground Absorption G	1
Wind Speed for Dir.(m/s)	3
Roads (RLS-90)	
Strictly acc. to RLS-90	
Railways (Schall 03)	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (AzB)	
Strictly acc. to AzB	

Receiver: Northern Property Line
ID: R1
X: 181.94
Y: 203.33
Z: 361.71
Ground: 360.19

ISO	Bezeichnung	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	-24.8	-24.8	1	179	1.72	32	56.06	0	-4.8	9.94	0.56	0	0	0	0	0	0	0	-85.93	-85.93
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	68.3	68.3	1	179	1.72	63	56.06	0	-4.8	11.95	0.56	0.02	0	0	0	0	0	0	5.15	5.15
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	76	76	1	179	1.72	125	56.06	0	1.89	8.7	0.56	0.06	0	0	0	0	0	0	9.32	9.32
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	81.5	81.5	1	179	1.72	250	56.06	0	14.7	0	0.56	0.2	0	0	0	0	0	0	10.57	10.57

	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	81.9	81.9	1	179	1.72	500	56.06	0	14.9	1.76	0.56	0.5	0	0	0	0	0	0	8.67	8.67
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	85.2	85.2	1	179	1.72	1000	56.06	0	3.39	16.11	0.56	0.89	0	0	0	0	0	0	8.79	8.79
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	82.6	82.6	1	179	1.72	2000	56.06	0	0	22.3	0.56	1.61	0	0	0	0	0	0	2.66	2.66
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	75.2	75.2	1	179	1.72	4000	56.06	0	0	24.75	0.56	4.1	0	0	0	0	0	0	-9.68	-9.68
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	68.7	68.7	1	179	1.72	8000	56.06	0	0	24.87	0.56	13.7	0	0	0	0	0	0	-25.91	-25.91
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	-24.7	-24.7	1	191.4	0.84	32	56.64	0	-4.7	8.81	0.09	0	0	0	0	0	0	0	-85.53	-85.53
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	44.9	44.9	1	191.4	0.84	63	56.64	0	-4.7	9.52	0.09	0.02	0	0	0	0	0	0	-16.66	-16.66
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	55.3	55.3	1	191.4	0.84	125	56.64	0	2.19	3.87	0.09	0.06	0	0	0	0	0	0	-7.51	-7.51
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	66.2	66.2	1	191.4	0.84	250	56.64	0	14	0	0.09	0.22	0	0	0	0	0	0	-4.73	-4.73
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	58.6	58.6	1	191.4	0.84	500	56.64	0	10.9	0	0.09	0.54	0	0	0	0	0	0	-9.51	-9.51
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	52	52	1	191.4	0.84	1000	56.64	0	1.64	9.48	0.09	0.95	0	0	0	0	0	0	-16.75	-16.75
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	50	50	1	191.4	0.84	2000	56.64	0	0	13.59	0.09	1.73	0	0	0	0	0	0	-22	-22
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	48.4	48.4	1	191.4	0.84	4000	56.64	0	0	16.32	0.09	4.38	0	0	0	0	0	0	-28.99	-28.99
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	47	47	1	191.4	0.84	8000	56.64	0	0	19.17	0.09	14.7	0	0	0	0	0	0	-43.52	-43.52
Limit. Value D/N:		0	0																									
Level D/N:		16.107	16.107																									

Receiver: Southern Property Line
ID: R2
X: 170.74
Y: -2.99
Z: 355.55
Ground: 354.03

ISO	Bezeichnung	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	-24.8	-24.8	1	29.67	2.2	32	40.45	0	-3	8.76	1.72	0	0	0	0	0	0	0	-70.98	-70.98
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	68.3	68.3	1	29.67	2.2	63	40.45	0	-3	10.96	1.72	0	0	0	0	0	0	0	19.92	19.92
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	76	76	1	29.67	2.2	125	40.45	0	0.5	10.82	1.72	0.01	0	0	0	0	0	0	24.26	24.26
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	81.5	81.5	1	29.67	2.2	250	40.45	0	6.76	8.26	1.72	0.03	0	0	0	0	0	0	26.03	26.03
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	81.9	81.9	1	29.67	2.2	500	40.45	0	6.86	12.18	1.72	0.08	0	0	0	0	0	0	22.36	22.36
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	85.2	85.2	1	29.67	2.2	1000	40.45	0	1.56	21.03	1.72	0.15	0	0	0	0	0	0	22.04	22.04
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	82.6	82.6	1	29.67	2.2	2000	40.45	0	0	23.93	1.72	0.27	0	0	0	0	0	0	17.99	17.99
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	75.2	75.2	1	29.67	2.2	4000	40.45	0	0	24.43	1.72	0.68	0	0	0	0	0	0	9.67	9.67
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	68.7	68.7	1	29.67	2.2	8000	40.45	0	0	24.71	1.72	2.27	0	0	0	0	0	0	1.3	1.3
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	-24.7	-24.7	1	16.49	1.6	32	35.35	0	-3	7.86	0.17	0	0	0	0	0	0	0	-64.95	-64.95
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	44.9	44.9	1	16.49	1.6	63	35.35	0	-3	8.41	0.17	0	0	0	0	0	0	0	4.1	4.1
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	55.3	55.3	1	16.49	1.6	125	35.35	0	0.37	5.87	0.17	0.01	0	0	0	0	0	0	13.66	13.66
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	66.2	66.2	1	16.49	1.6	250	35.35	0	4.01	3.4	0.17	0.02	0	0	0	0	0	0	23.38	23.38
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	58.6	58.6	1	16.49	1.6	500	35.35	0	3.11	5.93	0.17	0.05	0	0	0	0	0	0	14.11	14.11
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	52	52	1	16.49	1.6	1000	35.35	0	0.47	10.69	0.17	0.08	0	0	0	0	0	0	5.37	5.37
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	50	50	1	16.49	1.6	2000	35.35	0	0	13.64	0.17	0.15	0	0	0	0	0	0	0.82	0.82
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	48.4	48.4	1	16.49	1.6	4000	35.35	0	0	16.36	0.17	0.38	0	0	0	0	0	0	-3.73	-3.73
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	47	47	1	16.49	1.6	8000	35.35	0	0	19.22	0.17	1.26	0	0	0	0	0	0	-8.87	-8.87
Limit. Value D/N:		0	0																									
Level D/N:		31.6008	31.6008																									

Receiver: Eastern Property Line
ID: R3
X: 192.63
Y: 24.39
Z: 359.04
Ground: 357.51

ISO	Bezeichnung	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	-24.8	-24.8	1	10.74	3.88	32	31.62	0	-3	7.55	0.15	0	0	0	0	0	0	0	-60.94	-60.94
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	68.3	68.3	1	10.74	3.88	63	31.62	0	-3	8.16	0.15	0	0	0	0	0	0	0	31.55	31.55
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	76	76	1	10.74	3.88	125	31.62	0	0.21	5.82	0.15	0	0	0	0	0	0	0	38.38	38.38
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	81.5	81.5	1	10.74	3.88	250	31.62	0	2.89	4.23	0.15	0.01	0	0	0	0	0	0	42.77	42.77
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	81.9	81.9	1	10.74	3.88	500	31.62	0	2.94	5.73	0.15	0.03	0	0	0	0	0	0	41.61	41.61
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	85.2	85.2	1	10.74	3.88	1000	31.62	0	0.67	10.02	0.15	0.05	0	0	0	0	0	0	42.87	42.87
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	82.6	82.6	1	10.74	3.88	2000	31.62	0	0	13.11	0.15	0.1	0	0	0	0	0	0	37.81	37.81
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	75.2	75.2	1	10.74	3.88	4000	31.62	0	0	15.79	0.15	0.25	0	0	0	0	0	0	27.57	27.57

	Marvair ComPac II HVAC Unit			182	24.39	357.5	356.71	0	82.6	82.6	1	181.5	3.37	2000	56.18	0	0	17.79	0.58	1.64	0	0	0	0	0	0	7.02	7.02
	Marvair ComPac II HVAC Unit			182	24.39	357.5	356.71	0	75.2	75.2	1	181.5	3.37	4000	56.18	0	0	19.96	0.58	4.16	0	0	0	0	0	0	-5.07	-5.07
	Marvair ComPac II HVAC Unit			182	24.39	357.5	356.71	0	68.7	68.7	1	181.5	3.37	8000	56.18	0	0	19.98	0.58	13.9	0	0	0	0	0	0	-21.33	-21.33
Limit. Value D/N:		0	0																											
Level D/N:		18.1896	18.1896																											

Berechnung, Ende 23.02.06 14:32:50 (0 s)

Mitgated Combined
Cadna/A-Berechnung
Version 3.5.115 (32 Bit)
Datei: C:\Documents and Settings\jsmith\Desktop\Current Project Files\A60210N1 Nextel-Sprint-Bandy Canyon CA-8949-A-Escondido-MB\A60210N1 Sprint Brandy Canyon Mitigated ver 1 JDS.cna
Start: 23.02.06 14:31:30
Berechnungsparameter:

General	
Country	International
Max. Error (dB)	0
Max. Search Radius (m)	2000
Min. Dist Src to Rcvr	0
Partition	
Raster Factor	0.5
Max. Length of Section (m)	1000
Min. Length of Section (m)	1
Min. Length of Section (%)	0
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960
Reference Time Night (min)	480
Daytime Penalty (dB)	0
Recr. Time Penalty (dB)	6
Night-time Penalty (dB)	10
DTM	
Standard Height (m)	356.3
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src/Rcvr	100.00 100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.1
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier Dz with limit
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°C)	20
rel. Humidity (%)	70
Ground Absorption G	1
Wind Speed for Dir.(m/s)	3
Roads (RLS-90)	
Strictly acc. to RLS-90	
Railways (Schall 03)	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (AzB)	
Strictly acc. to AzB	

Receiver: Northern Property Line
ID: R1
X: 181.94
Y: 203.33
Z: 361.71
Ground: 360.19

ISO	Bezeichnung	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	-24.8	-24.8	1	179	1.8	32	56.06	0	-4.8	10.8	1.14	0	0	0	0	0	0	0	-86.8	-86.8
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	68.3	68.3	1	179	1.8	63	56.06	0	-4.8	13.46	1.14	0.02	0	0	0	0	0	0	3.63	3.63
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	76	76	1	179	1.8	125	56.06	0	1.89	11.12	1.14	0.06	0	0	0	0	0	0	6.91	6.91
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	81.5	81.5	1	179	1.8	250	56.06	0	14.7	1.95	1.14	0.2	0	0	0	0	0	0	8.62	8.62

	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	81.9	81.9	1	179	1.8	500	56.06	0	14.9	4.78	1.14	0.5	0	0	0	0	0	0	5.65	5.65
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	85.2	85.2	1	179	1.8	1000	56.06	0	3.39	19.07	1.14	0.89	0	0	0	0	0	0	5.82	5.82
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	82.6	82.6	1	179	1.8	2000	56.06	0	0	24.51	1.14	1.61	0	0	0	0	0	0	0.45	0.45
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	75.2	75.2	1	179	1.8	4000	56.06	0	0	24.75	1.14	4.1	0	0	0	0	0	0	-9.68	-9.68
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	68.7	68.7	1	179	1.8	8000	56.06	0	0	24.87	1.14	13.7	0	0	0	0	0	0	-25.91	-25.91
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	-24.7	-24.7	1	191.4	0.84	32	56.64	0	-4.7	8.81	0.09	0	0	0	0	0	0	0	-85.53	-85.53
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	44.9	44.9	1	191.4	0.84	63	56.64	0	-4.7	9.52	0.09	0.02	0	0	0	0	0	0	-16.66	-16.66
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	55.3	55.3	1	191.4	0.84	125	56.64	0	2.19	3.87	0.09	0.06	0	0	0	0	0	0	-7.51	-7.51
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	66.2	66.2	1	191.4	0.84	250	56.64	0	14	0	0.09	0.22	0	0	0	0	0	0	-4.73	-4.73
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	58.6	58.6	1	191.4	0.84	500	56.64	0	10.9	0	0.09	0.54	0	0	0	0	0	0	-9.51	-9.51
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	52	52	1	191.4	0.84	1000	56.64	0	1.64	9.48	0.09	0.95	0	0	0	0	0	0	-16.75	-16.75
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	50	50	1	191.4	0.84	2000	56.64	0	0	13.59	0.09	1.73	0	0	0	0	0	0	-22	-22
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	48.4	48.4	1	191.4	0.84	4000	56.64	0	0	16.32	0.09	4.38	0	0	0	0	0	0	-28.99	-28.99
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	47	47	1	191.4	0.84	8000	56.64	0	0	19.17	0.09	14.7	0	0	0	0	0	0	-43.52	-43.52
Limit. Value D/N:		0	0																								
Level D/N:		13.7811	13.7811																								

Receiver: Southern Property Line
ID: R2
X: 170.74
Y: -2.99
Z: 355.55
Ground: 354.03

ISO	Bezeichnung	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	-24.8	-24.8	1	29.67	2.49	32	40.45	0	-3	8.83	1.79	0	0	0	0	0	0	0	-71.05	-71.05
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	68.3	68.3	1	29.67	2.49	63	40.45	0	-3	11.12	1.79	0	0	0	0	0	0	0	19.76	19.76
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	76	76	1	29.67	2.49	125	40.45	0	0.5	11.35	1.79	0.01	0	0	0	0	0	0	23.73	23.73
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	81.5	81.5	1	29.67	2.49	250	40.45	0	6.76	9.6	1.79	0.03	0	0	0	0	0	0	24.7	24.7
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	81.9	81.9	1	29.67	2.49	500	40.45	0	6.86	13.69	1.79	0.08	0	0	0	0	0	0	20.84	20.84
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	85.2	85.2	1	29.67	2.49	1000	40.45	0	1.56	21.76	1.79	0.15	0	0	0	0	0	0	21.32	21.32
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	82.6	82.6	1	29.67	2.49	2000	40.45	0	0	23.93	1.79	0.27	0	0	0	0	0	0	17.99	17.99
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	75.2	75.2	1	29.67	2.49	4000	40.45	0	0	24.43	1.79	0.68	0	0	0	0	0	0	9.67	9.67
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	68.7	68.7	1	29.67	2.49	8000	40.45	0	0	24.71	1.79	2.27	0	0	0	0	0	0	1.3	1.3
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	-24.7	-24.7	1	16.49	1.6	32	35.35	0	-3	7.86	0.17	0	0	0	0	0	0	0	-64.96	-64.96
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	44.9	44.9	1	16.49	1.6	63	35.35	0	-3	8.41	0.17	0	0	0	0	0	0	0	4.09	4.09
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	55.3	55.3	1	16.49	1.6	125	35.35	0	0.37	5.87	0.17	0.01	0	0	0	0	0	0	13.66	13.66
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	66.2	66.2	1	16.49	1.6	250	35.35	0	4.01	3.4	0.17	0.02	0	0	0	0	0	0	23.38	23.38
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	58.6	58.6	1	16.49	1.6	500	35.35	0	3.11	5.93	0.17	0.05	0	0	0	0	0	0	14.11	14.11
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	52	52	1	16.49	1.6	1000	35.35	0	0.47	10.69	0.17	0.08	0	0	0	0	0	0	5.37	5.37
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	50	50	1	16.49	1.6	2000	35.35	0	0	13.64	0.17	0.15	0	0	0	0	0	0	0.82	0.82
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	48.4	48.4	1	16.49	1.6	4000	35.35	0	0	16.36	0.17	0.38	0	0	0	0	0	0	-3.73	-3.73
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	47	47	1	16.49	1.6	8000	35.35	0	0	19.22	0.17	1.26	0	0	0	0	0	0	-8.87	-8.87
Limit. Value D/N:		0	0																								
Level D/N:		30.9003	30.9003																								

Receiver: Eastern Property Line
ID: R3
X: 192.63
Y: 24.39
Z: 359.04
Ground: 357.51

ISO	Bezeichnung	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	-24.8	-24.8	1	10.74	4.26	32	31.62	0	-3	8.61	0.53	0	0	0	0	0	0	0	-62	-62
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	68.3	68.3	1	10.74	4.26	63	31.62	0	-3	9.7	0.53	0	0	0	0	0	0	0	30.01	30.01
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	76	76	1	10.74	4.26	125	31.62	0	0.21	8.08	0.53	0	0	0	0	0	0	0	36.12	36.12
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	81.5	81.5	1	10.74	4.26	250	31.62	0	2.89	7.39	0.53	0.01	0	0	0	0	0	0	39.62	39.62
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	81.9	81.9	1	10.74	4.26	500	31.62	0	2.94	9.71	0.53	0.03	0	0	0	0	0	0	37.63	37.63
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	85.2	85.2	1	10.74	4.26	1000	31.62	0	0.67	14.6	0.53	0.05	0	0	0	0	0	0	38.28	38.28
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	82.6	82.6	1	10.74	4.26	2000	31.62	0	0	18.08	0.53	0.1	0	0	0	0	0	0	32.83	32.83
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	75.2	75.2	1	10.74	4.26	4000	31.62	0	0	19.96	0.53	0.25	0	0	0	0	0	0	23.4	23.4

	Marvair ComPac II HVAC Unit			182	24.39	357.5	356.71	0	68.7	68.7	1	10.74	4.26	8000	31.62	0	0	19.98	0.53	0.82	0	0	0	0	0	0	16.31	16.31
	Ericsson RBS 2102 Cabinet			177.3	12.07	357.23	355.91	0	-24.7	-24.7	1	19.79	7.64	32	36.93	0	-3	8.62	0.34	0	0	0	0	0	0	0	-67.29	-67.29
	Ericsson RBS 2102 Cabinet			177.3	12.07	357.23	355.91	0	44.9	44.9	1	19.79	7.64	63	36.93	0	-3	9.39	0.34	0	0	0	0	0	0	0	1.53	1.53
	Ericsson RBS 2102 Cabinet			177.3	12.07	357.23	355.91	0	55.3	55.3	1	19.79	7.64	125	36.93	0	0.43	7.47	0.34	0.01	0	0	0	0	0	0	10.42	10.42
	Ericsson RBS 2102 Cabinet			177.3	12.07	357.23	355.91	0	66.2	66.2	1	19.79	7.64	250	36.93	0	4.67	6.04	0.34	0.02	0	0	0	0	0	0	18.49	18.49
	Ericsson RBS 2102 Cabinet			177.3	12.07	357.23	355.91	0	58.6	58.6	1	19.79	7.64	500	36.93	0	3.62	10.73	0.34	0.06	0	0	0	0	0	0	7.22	7.22
	Ericsson RBS 2102 Cabinet			177.3	12.07	357.23	355.91	0	52	52	1	19.79	7.64	1000	36.93	0	0.54	17.2	0.34	0.1	0	0	0	0	0	0	-2.82	-2.82
	Ericsson RBS 2102 Cabinet			177.3	12.07	357.23	355.91	0	50	50	1	19.79	7.64	2000	36.93	0	0	20.84	0.34	0.18	0	0	0	0	0	0	-8	-8
	Ericsson RBS 2102 Cabinet			177.3	12.07	357.23	355.91	0	48.4	48.4	1	19.79	7.64	4000	36.93	0	0	23.85	0.34	0.45	0	0	0	0	0	0	-12.88	-12.88
	Ericsson RBS 2102 Cabinet			177.3	12.07	357.23	355.91	0	47	47	1	19.79	7.64	8000	36.93	0	0	25	0.34	1.52	0	0	0	0	0	0	-16.49	-16.49
Limit. Value D/N:			0	0																									
Level D/N:			44.631	44.631																									

Receiver: Western Property Line
ID: R4
X: 0.72
Y: 16.1
Z: 354.91
Ground: 353.39

ISO	Bezeichnung	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	-24.8	-24.8	1	181.5	3.37	32	56.18	0	-4.9	10.24	0.58	0	0	0	0	0	0	0	-86.34	-86.34
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	68.3	68.3	1	181.5	3.37	63	56.18	0	-4.9	11.34	0.58	0.02	0	0	0	0	0	0	5.65	5.65
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	76	76	1	181.5	3.37	125	56.18	0	1.91	6.24	0.58	0.06	0	0	0	0	0	0	11.64	11.64
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	81.5	81.5	1	181.5	3.37	250	56.18	0	14.7	0	0.58	0.21	0	0	0	0	0	0	10.43	10.43
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	81.9	81.9	1	181.5	3.37	500	56.18	0	15	0	0.58	0.51	0	0	0	0	0	0	10.29	10.29
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	85.2	85.2	1	181.5	3.37	1000	56.18	0	3.39	11.62	0.58	0.9	0	0	0	0	0	0	13.13	13.13
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	82.6	82.6	1	181.5	3.37	2000	56.18	0	0	17.79	0.58	1.64	0	0	0	0	0	0	7.02	7.02
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	75.2	75.2	1	181.5	3.37	4000	56.18	0	0	19.96	0.58	4.16	0	0	0	0	0	0	-5.07	-5.07
	Marvair ComPac II HVAC Unit		182	24.39	357.5	356.71	0	68.7	68.7	1	181.5	3.37	8000	56.18	0	0	19.98	0.58	13.9	0	0	0	0	0	0	-21.33	-21.33
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	-24.7	-24.7	1	176.6	2.8	32	55.94	0	-4.6	9.3	0.21	0	0	0	0	0	0	0	-85.44	-85.44
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	44.9	44.9	1	176.6	2.8	63	55.94	0	-4.6	9.93	0.21	0.02	0	0	0	0	0	0	-16.48	-16.48
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	55.3	55.3	1	176.6	2.8	125	55.94	0	2.05	4.3	0.21	0.06	0	0	0	0	0	0	-7.1	-7.1
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	66.2	66.2	1	176.6	2.8	250	55.94	0	13.9	0	0.21	0.2	0	0	0	0	0	0	-3.91	-3.91
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	58.6	58.6	1	176.6	2.8	500	55.94	0	10.8	0	0.21	0.49	0	0	0	0	0	0	-8.69	-8.69
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	52	52	1	176.6	2.8	1000	55.94	0	1.62	9.76	0.21	0.88	0	0	0	0	0	0	-16.25	-16.25
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	50	50	1	176.6	2.8	2000	55.94	0	0	13.89	0.21	1.59	0	0	0	0	0	0	-21.47	-21.47
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	48.4	48.4	1	176.6	2.8	4000	55.94	0	0	16.63	0.21	4.05	0	0	0	0	0	0	-28.26	-28.26
	Ericsson RBS 2102 Cabinet		177.3	12.07	357.23	355.91	0	47	47	1	176.6	2.8	8000	55.94	0	0	19.5	0.21	13.5	0	0	0	0	0	0	-42.02	-42.02
Limit. Value D/N:		0	0																								
Level D/N:		18.2415	18.2415																								

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NOISE IMPACT ANALYSIS

Sprint Communications
Site Number: CA-8949-A
Site Name: Bandy Canyon
15738 Highland Valley Road
Escondido, California 92025

County of San Diego Major Use Permit
Case Number: P05-050; Log No. 05-08-029

Prepared For

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Job # A60210N1

March 2, 2006

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APPENDICES

1.0 EXECUTIVE SUMMARY

The proposed Sprint/Nextel wireless telecommunications facility, known as Bandy Canyon, consists of the construction of an unmanned telecommunications facility consisting of a 10.5-foot high by 11.5-foot wide by 20-foot long prefabricated equipment shelter which will enclose equipment cabinets for wireless telecommunications equipment. Also planned are 15 panel antennas which will be mounted on a proposed 35-foot high mono-broadleaf and two GPS antennas which will be mounted on the equipment shelter. New electric and telco runs to the area of the equipment shelter are also planned. The project site is located at 15738 Highland Valley Road, in Escondido, County of San Diego, California.

The purpose of this report is to assess noise impacts from on-site noise sources, and to determine if mitigation is necessary and feasible to reduce project related property line noise impacts to below 45 dBA, in compliance with the County of San Diego most restrictive nighttime property line noise limit.

Based on the project information available, calculations show that HVAC equipment noise impacts from the proposed Sprint/Nextel facility will be as high as 48.3 dBA L_{EQ} at the eastern property line, at the worst case location.

Mitigation is required to reduce the property line noise impacts to meet the most restrictive 45 dBA nighttime noise limit at the eastern property line. The noise levels at the remaining property lines are expected to comply with the County of San Diego nighttime property line noise limits without any mitigation measures, due to distance and topography.

The required noise levels can be achieved by shielding the air conditioning units with a sound attenuation barrier. The project plans depict a proposed 8-foot high wooden fence surrounding the proposed equipment shelter. Even if the proposed fence were constructed to meet the requirements of a sound attenuation barrier, the noise level at the eastern property line will exceed the allowable noise limits. The barrier must be constructed to a minimum height of 10.5-feet relative to the equipment shelter pad grade elevation in order to reduce the noise impacts to below 45 dBA. No other noise attenuation mitigation for the proposed project is required.

With the recommended mitigation, the unmanned operation of this facility will be in compliance with the most restrictive County of San Diego 45 dBA nighttime property line noise limits.

2.0 INTRODUCTION

This acoustical analysis report is submitted to satisfy the County of San Diego requirement for a major use permit. Its purpose is to assess noise impacts from on-site project related noise sources, and to determine if mitigation is necessary and feasible to reduce property line noise impacts to below 45 dBA, in compliance with the County of San Diego nighttime property line noise limit.

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting, abbreviated "dBA," to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol "L_{EQ}" unless a different time period is specified, "L_{EQ}" is implied to mean a period of one hour. Some of the data may also be presented as octave-band-filtered and/or A-octave-band-filtered data, which are a series of sound spectra centered about each stated frequency, with half of the bandwidth above and half of the bandwidth below each stated frequency. This data is typically used for machinery noise analysis and barrier-effectiveness calculations.

The Community Noise Equivalent Level (CNEL) is a 24-hour average, where sound levels during evening hours of 7 p.m. to 10 p.m. have an added 5 dB weighting, and sound levels during nighttime hours of 10 p.m. to 7 a.m. have an added 10 dB weighting. This is similar to the Day-Night Sound Level (L_{DN}), which is a 24-hour average with 10 dB added weighting on the same nighttime hours but no added weighting on the evening hours. Sound levels expressed in CNEL are always based on A-weighted decibels. These data unit metrics are used to express noise levels for both measurement and municipal noise ordinances and regulations, for land use guidelines, and enforcement of noise ordinances. Further explanation can be provided upon request.

Noise emission data is often supplied per the industry standard format of Sound Power, which is the total acoustic power radiated from a given sound source as related to a reference power level. Sound Power differs from Sound Pressure, which is the fluctuations in air pressure caused by the presence of sound waves, and is generally the format that describes noise levels as heard by the receiver.

Sound Pressure is the actual noise experienced by a human or registered by a sound level instrument. When Sound Pressure is used to describe a noise source it must specify the distance from the noise source to provide complete information. Sound Power, on the other hand, is a specialized analytical method to provide information without the distance requirement, but it may be used to calculate the sound pressure at any desired distance.

2.1 Project Location

The subject property is located at 15738 Highland Valley Road, in Escondido, California. The Assessor's Parcel Number (APN) is 276-150-02-00. The property is rectangular in shape with an overall site area of approximately 9.7 acres. The zoning designation for the subject parcel is A-70 for agricultural use. Planned land uses in the vicinity of the project site are residential and agricultural to the north, agricultural to the east and west, and residential to the south.

The subject property is currently occupied by a single private residence. There is one existing wireless facility on the subject site operated by T-Mobile. The proposed Sprint/Nextel lease area site is in the southeast corner of the subject property, immediately adjacent to the north side of T-Mobile facility, and approximately 350 feet south of the existing home. The lease area is currently an undeveloped open space.

For a graphic representation of the site, please refer to the Thomas Guide Map, Assessor's Parcel Map, Satellite Aerial Photograph, Topographic Map, and Land Use Map provided as Figures 1 through 5, respectively.

2.2 Project Description

The proposed project consists of the construction of an unmanned telecommunications facility consisting of a 10.5-foot high by 11.5-foot wide by 20-foot long prefabricated equipment shelter which will enclose equipment cabinets for wireless telecommunications equipment. Also planned are 15 panel antennas which will be mounted on a proposed 35-foot high mono-broadleaf and two GPS antennas which will be mounted on the equipment shelter. New electric and telco runs to the area of the equipment shelter are also planned.

For additional project details, please refer to the project plans provided in Appendix A.

2.3 Applicable Noise Standards

The noise regulations applicable to this project are contained within the San Diego County Code, Section 8.32.040, entitled Sound Level Limits. Based on these noise regulations, and the County of San Diego scoping letter, dated January 25, 2006, the following property line noise limits apply for this project: 50 dBA from 7 a.m. to 10 p.m. and 45 dBA from 10 p.m. to 7 a.m. Planning for this project will be based on the more restrictive nighttime limit of 45 dBA.

Please refer to copies of the pertinent related sections from the County of San Diego scoping letter which is provided as Appendix B and pertinent sections of the San Diego County Code provided as Appendix C.

3.0 ENVIRONMENTAL SETTING

3.1 Existing Noise Environment

3.1.1 Existing Noise Sources

The existing noise environment is primarily a result of traffic noise from Highland Valley Road and the existing on-site T-Mobile wireless equipment facility.

Existing T-Mobile Wireless Facility

The existing T-Mobile wireless equipment facility consists of one type of significant noise source which is an Ericsson RBS 2102 un-enclosed equipment cabinet. One 2102 cabinet is currently installed at the T-Mobile facility. The existing T-Mobile facility also consists of a faux water tower with an antenna array, and a 6-foot high wooden fence surrounding the entire facility.

Manufacturer's noise emission data for an Ericsson RBS 2102 cabinet were unavailable. To determine the expected equipment exterior noise levels for this analysis, it was necessary to measure the noise level of a single operational unit. A noise level measurement of a single existing RBS 2102 equipment cabinet was made at an operational Cingular wireless installation at 32165 Shamrock Road in Bonsall (Fallbrook Community Planning Area), California, at 2:30 p.m. on November 2, 2003. The measured

noise level was 52.8 dBA L_{EQ} at 5 feet. The octave-band noise data for the equipment cabinet noise measurement used in the new Cingular planning analysis is provided in Table 1.

Table 1. Measured Noise Level of a Single Operational Ericsson RBS 2102 Cabinet									
Octave Band Center Frequency (Hz)	63	125	250	500	1K	2K	4K	8K	L_{EQ}
Noise Level at 5 feet (dB)	56.4	56.7	60.1	47.1	37.3	34.1	32.7	33.4	52.8 dBA

3.1.2 Ambient Noise Monitoring

An on-site inspection was conducted at 3:07 p.m. on Monday, February 13, 2006. The weather conditions were as follows: a breeze from the west, low humidity, and temperatures in the low 70's. A 5-minute ambient noise measurement of 55.5 dBA L_{EQ} was taken at a location adjacent to the proposed lease area. The microphone position was approximately five feet above the existing grade.

3.2 Future Noise Environment

The future noise environment in the vicinity of the project site will be primarily a result of the same noise sources, as well as the proposed Sprint/Nextel wireless facility.

3.2.1 Project Related Noise Sources

The proposed Sprint/Nextel wireless equipment facility consists of one type of significant noise source, which are exterior-mounted air conditioning units.

This project proposes the use of two Marvair ComPac II HVAC units. While two HVAC units are planned to be installed on the exterior of the equipment shelter, only one is expected to be operational at a time, never running simultaneously. The proposed Sprint/Nextel facility is planned to be operational 24 hours a day, 7 days a week.

To determine the expected equipment exterior noise levels for this analysis, it was necessary to measure the noise level of a single operational unit. The manufacturer's data show the noise emission level for this unit as 73 dBA at 5 feet. A noise level measurement of a single existing Marvair ComPac II HVAC unit was made at an operational Verizon installation at Casa de las Campanas, 18655 West Bernardo Drive, in the City of San Diego, California, at 7:30 a.m. on November 24, 2003. The measured noise level was 74.9 dBA L_{EQ} at 5 feet. The measurement may have a small traffic noise contribution, as it is slightly higher than the manufacturer's data; therefore, the measured noise level will be used for worst-case analysis and noise planning purposes. The octave-band noise data for the HVAC unit noise measurement used in the new Sprint/Nextel planning analysis is provided in Table 2.

Table 2. Measured Noise Level of a Single Operational Marvair ComPac II HVAC Unit									
Octave Band Center Frequency (Hz)	63	125	250	500	1K	2K	4K	8K	L_{EQ}
Noise Level at 5 feet (dB)	79.9	77.5	75.5	70.5	70.6	66.8	59.6	55.2	74.9 dBA

The Sprint/Nextel wireless facility also incorporates fully enclosed equipment cabinets housed within a pre-fabricated shelter. Noise impacts from these equipment cabinets are not considered significant, and therefore are not included in the noise impact analysis.

4.0 METHODOLOGY AND EQUIPMENT

4.1 Methodology

4.1.1 Cadna Noise Modeling Software

Modeling of the outdoor noise environment is accomplished using Cadna Ver. 3.5, which is a model-based computer program developed by DataKustik for predicting noise impacts in a wide variety of conditions. Cadna (Computer Aided Noise Abatement) assists in the calculation, presentation, assessment, and mitigation of noise exposure. It allows for the input of project information such as noise source data, barriers, structures, and topography to create a detailed CAD model and uses the most up-to-date calculation standards to predict outdoor noise impacts.

4.1.2 Summary of Site Specific Features Included in Cadna Model

Features at the project site that were included in the Cadna noise prediction model are listed in Table 3. These are considered to be the only on-site features that will affect the noise propagation of the proposed noise sources to the adjacent property lines.

Table 3. Summary of Site Features Included in Cadna Model

Description	Height
Existing Home	15 feet above grade
Existing T-Mobile Equipment	13 feet above grade
Existing Fence Surrounding T-Mobile Facility	6 feet above grade
Proposed Sprint/Nextel HVAC Equipment	4 feet above grade
Proposed Sprint/Nextel Equipment Shelter	10.5 feet above grade

4.1.3 Calculated Noise Levels for Model Comparison

In order to validate the results of the Cadna noise prediction model, the noise impacts from the proposed Sprint/Nextel HVAC equipment were manually calculated as simple attenuation by distance. This was done for each of the property line receiver locations. These values were compared to those predicted by Cadna. The Cadna model includes additional attenuation due to intervening structures, topography, and ground absorption, which the differences in modeled and calculated noise levels are attributed to. This data is summarized in Table 4.

Table 4. Calculated Noise Levels for Model Comparison						
Noise Source	Receiver	Location	Distance from Source (ft.)	Calculated Noise Level[1] (dBA)	Cadna Model Noise Level[2] (dBA)	Difference (dB)
Marvair ComPac II 74.9 dBA Measured @ 5 ft.	R1	Northern Property Line	587	33.5	16.1	17.4
	R2	Southern Property Line	97	49.1	31.6	17.5
	R3	Eastern Property Line	35	57.9	48.3	9.6
	R4	Western Property Line	595	33.4	20.4	13.0

[1] Calculated as attenuation by distance only, $L_2 = L_1 - 20\log\left(\frac{d_2}{d_1}\right)$

[2] As predicted by Cadna model

4.2 Measurement Equipment

Some or all of the following equipment was used at the site to measure existing noise levels:

- Larson Davis Model 824, Type 1 Sound Level Meter, Serial #824A0343
- Larson Davis Model CA250, Type 1 Calibrator, Serial #2625

The sound level meter was field-calibrated immediately prior to the noise measurement and checked afterwards, to ensure accuracy. All sound level measurements conducted and presented in this report, in accordance with the regulations, were made with sound level meters that conform to the American National Standards Institute specifications for sound level meters (ANSI SI.4-1983, R2001). All instruments are maintained with National Bureau of Standards traceable calibration, per the manufacturers' standards.

5.0 IMPACTS

The proposed Sprint/Nextel facility HVAC equipment noise levels are expected to exceed the County of San Diego nighttime property line noise limits at the eastern property line. Based on the project information available, calculations show that HVAC equipment noise impacts from the proposed Sprint/Nextel facility will be as high as 48.3 dBA L_{EQ} at the eastern property line, at the worst case location. The calculated noise levels at each property line at the worst case location are summarized in Table 5.

For details of the acoustical analysis, please refer to Appendix D: Cadna Analysis Data and Results. Please also refer to Figure 6: Site Plan Showing Unmitigated Noise Impacts to Project Vicinity and Property Line Receiver Locations.

Table 5. Calculated Combined Wireless Facility Noise Impact Levels				
Receiver Location	T-Mobile (dBA L_{EQ})	Sprint/Nextel (dBA L_{EQ})	Combined[1] (dBA L_{EQ})	Increase due to Sprint/Nextel (dB)
R1, Northern Property Line	0.0	16.0	16.1	16.0
R2, Southern Property Line	24.4	30.7	31.6	7.2
R3, Eastern Property Line	22.1	48.3	48.3	26.2
R4, Western Property Line	0.0	20.3	20.4	20.3

[1] All equipment combined noise level

The HVAC equipment for the proposed Sprint/Nextel facility will not create any significant noise impacts to the existing residence on the subject parcel. The noise levels at the building façade of the existing home are not expected to exceed 21.0 dBA L_{EQ}. The property lines that lie south of the existing home will not be impacted by any significant noise generated by the proposed wireless facility.

6.0 MITIGATION

Mitigation is required to reduce the property line noise impacts to meet the most restrictive 45 dBA nighttime noise limit at the western and northern property lines.

The required noise levels can be achieved by shielding the air conditioning units with a sound attenuation barrier. The project plans depict a proposed 8-foot high wooden fence surrounding the proposed equipment shelter. Even if the proposed fence were constructed to meet the requirements of a sound attenuation barrier, the noise level at the eastern property line will exceed the allowable noise limits. The barrier must be constructed to a minimum height of 10.5-feet relative to the equipment shelter pad grade elevation in order to reduce the noise impacts to below 45 dBA. No other noise attenuation mitigation for the proposed project is required.

The sound attenuation barrier should be a single, solid sound wall. The sound attenuation barrier height should be based on the finished pad grade elevation of the proposed prefabricated shelter. The sound attenuation barrier should be solid and constructed of masonry, wood, plastic, fiberglass, steel, or a combination of those materials, with no cracks or gaps through or below the wall. Any seams or cracks must be filled or caulked. If wood is used, it can be tongue and groove and must be at least one-inch thick or have a surface density of at least 3½ pounds per square foot. Where architectural or aesthetic factors allow, glass or clear plastic may be used on the upper portion, if it is desirable to preserve a view. Sheet metal of 18-gauge (minimum) may be used, if it meets the other criteria and is properly supported and stiffened so that it does not rattle or create noise itself from vibration or wind. Any doors or gates must be designed with overlapping closures on the bottom and sides and meet the minimum specifications of the wall materials described above. The gate(s) may be of ¾-inch or thicker wood, solid-sheet metal of at least 18-gauge metal, or an exterior-grade solid-core steel door with prefabricated door jambs.

The calculated noise levels, with the sound attenuation barrier mitigation in place, are shown in Table 6. For details of the acoustical analysis, please refer to Appendix D: Cadna Analysis Data and Results.

Table 6. Calculated Combined Mitigated Wireless Facility Noise Impact Levels

Receiver Location	T-Mobile (dBA L_{EQ})	Sprint/Nextel (dBA L_{EQ})	Combined[1] (dBA L_{EQ})	Increase due to Sprint/Nextel (dB)
R1, Northern Property Line	0.0	13.7	13.8	13.8
R2, Southern Property Line	24.4	29.8	30.9	6.5
R3, Eastern Property Line	19.5	44.6	44.6	25.1
R4, Western Property Line	0.0	18.2	18.2	18.2

[1] All equipment combined noise level

With the recommended mitigation, the unmanned operation of this facility will be in compliance with the County of San Diego nighttime property line noise limits.

Please refer to Figure 7: Site Plan Showing Mitigated Noise Impacts to Project Vicinity and Property Line Receiver Locations.

7.0 CONCLUSION

With the installation of the recommended sound attenuation barrier, the proposed Sprint/Nextel wireless facility will be in compliance with all applicable County of San Diego property line noise limits.

These conclusions and recommendations are based on the most up-to-date, project-related information available. However, noise characteristics of mechanical equipment may vary for specific installations. Verification of compliance with County of San Diego noise regulations can be provided, if desired, by conducting a noise survey consisting of sound level measurements at or close to the nearest impacted locations in each direction, after the project is built and in operation.

This is best accomplished in the late night or very early morning hours while the equipment is in full operation and other ambient noise sources are minimized. If any additional sound attenuation is found to be necessary, it can be specified at that time. We do not expect that any additional sound attenuation will be necessary within the scope of this project.

8.0 CERTIFICATION

This report is based on the related project information received and measured noise levels, and represents a true and factual analysis of the acoustical impact issues associated with the proposed Sprint/Nextel wireless telecommunications facility, located 15738 Highland Valley Road, in Escondido, County of San Diego, California. This report was prepared by Justin Smith, Michael Burrill, Charles Terry, and Douglas Eilar.

EILAR ASSOCIATES

Justin D. Smith, Senior Acoustical Consultant

Douglas K. Eilar, Principal

9.0 REFERENCES

1. Beranek, Leo L., *Acoustical Measurements*, Published for the Acoustical Society of America by the American Institute of Physics, Revised Edition, 1988.

2. San Diego County Code

3. Harris, Cyril M., *Handbook of Acoustical Measurements and Noise Control*, Acoustical Society of America, 3rd Edition, 1998.

4. Harris, Cyril M., Ph.D., *Noise Control in Buildings*, Original Edition, 1994.

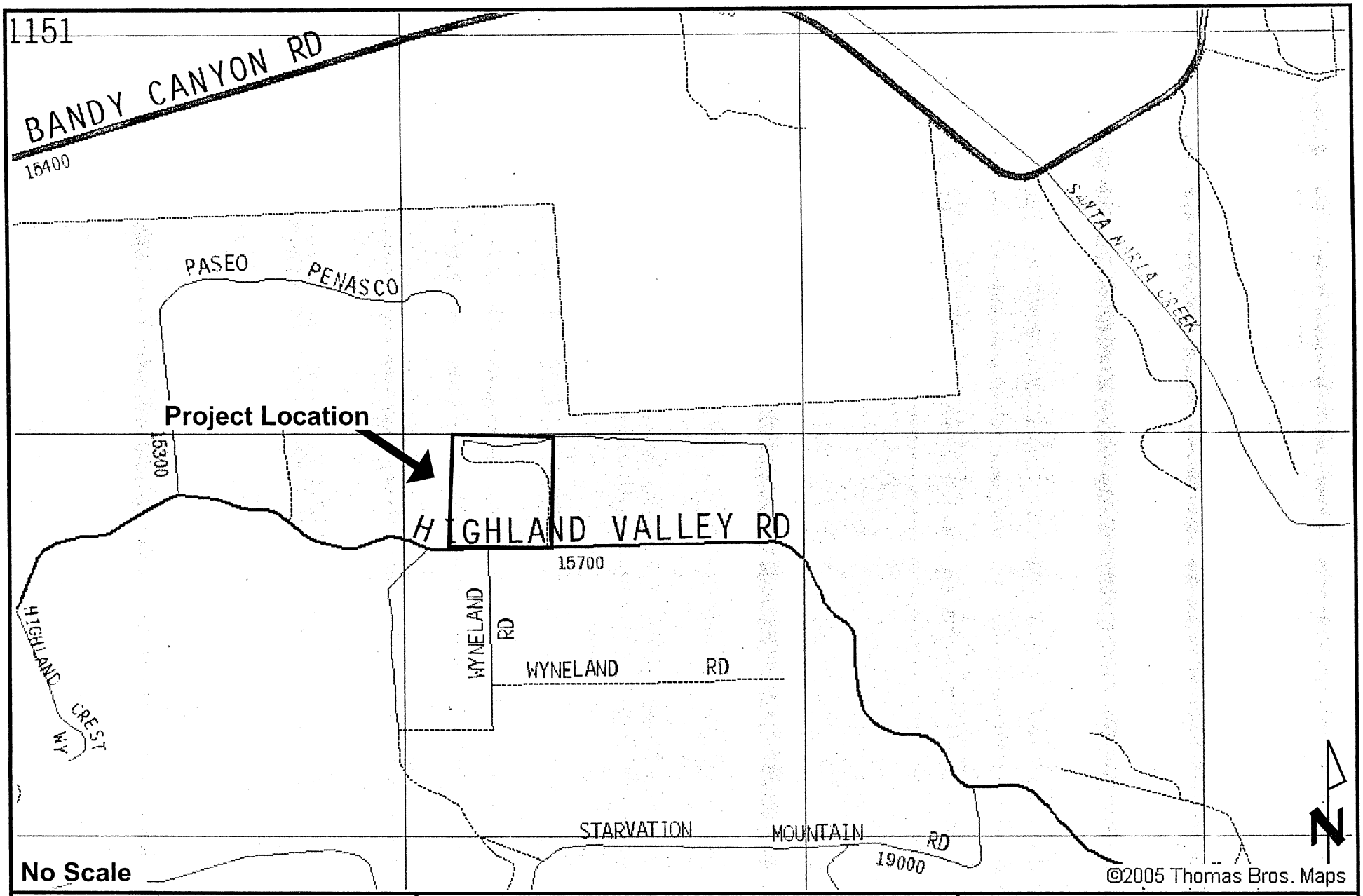
5. Hirschorn, Martin, *Noise Control Reference Handbook*, Revised Edition, 1989.

6 Ivine, Leland K. and Richards, Roy L., *Acoustics and Noise Control Handbook for Architects and Builders*, Original Edition, 1998.

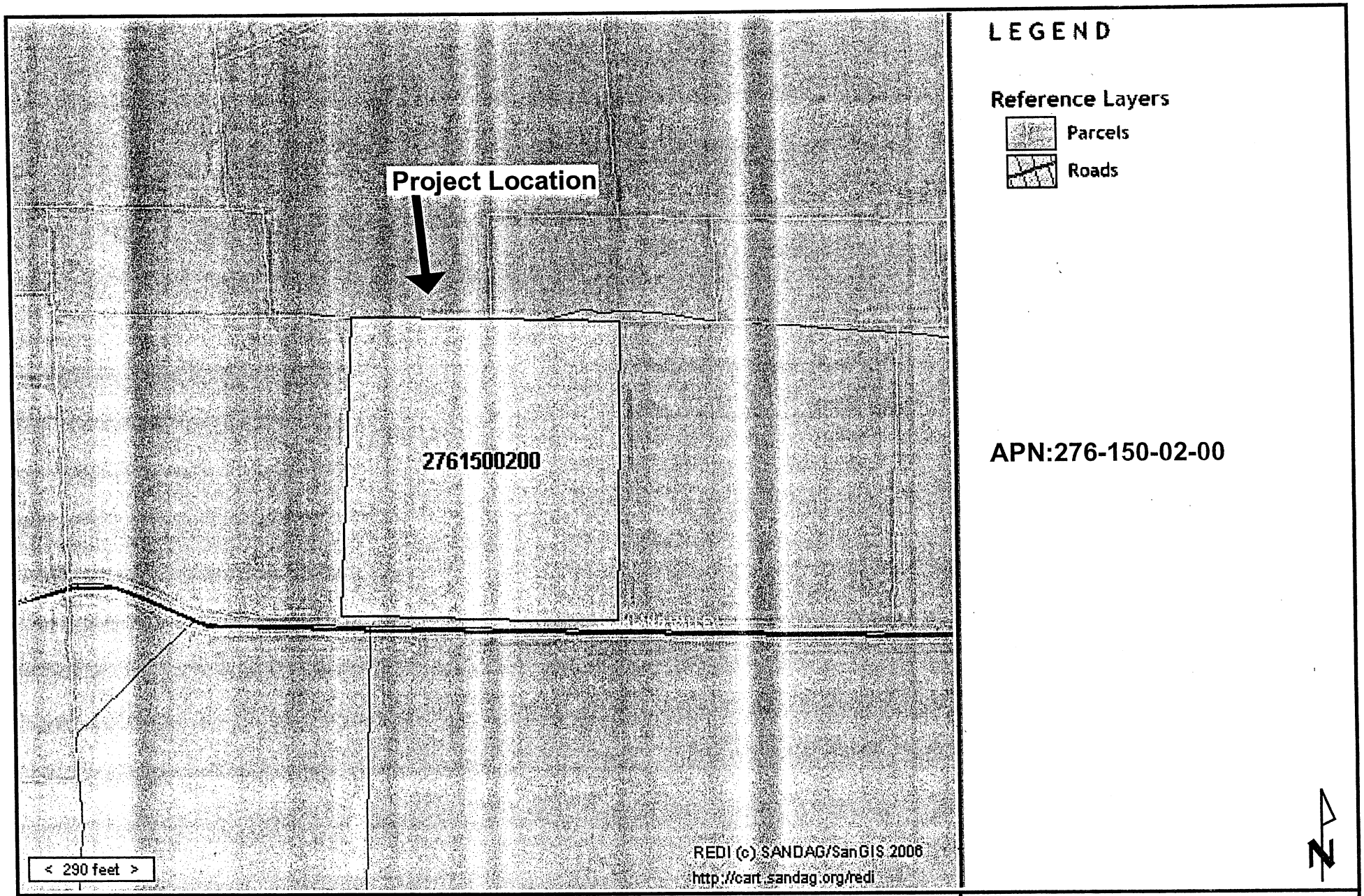
7 Knudsen, Vern O. and Harris, Cyril M., *Acoustical Designing In Architecture*, American Institute of Physics for the Acoustical Society of America, 2nd Edition, 1978.

8. Raichel, Daniel R., *The Science and Applications of Acoustics*, American Institute of Physics Press for the Acoustical Society of America, 1st Edition, 2000.

FIGURES



Eilar Associates **539 Encinitas Boulevard, Suite 206** **Encinitas, California 92024** **760-753-1865**	**Thomas Guide Map** **Job # A60210N1**	**Figure 1**



Eilar Associates 539 Encinitas Boulevard, Suite 206 Encinitas, California 92024 760-753-1865	Assessor's Parcel Map Job # A60210N1	Figure 2